

COMMERCIAL REFRIGERATION & AIR CONDITIONING

JULY 1954

You Don't Have
To BE Big To SELL Big!
..... PAGE 34



Air Conditioning
Builds Sales For The Builder
..... PAGE 68



A New Use For
Old Dairy Display Cases
..... PAGE 41



MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT

you don't have to be a prize

salesman

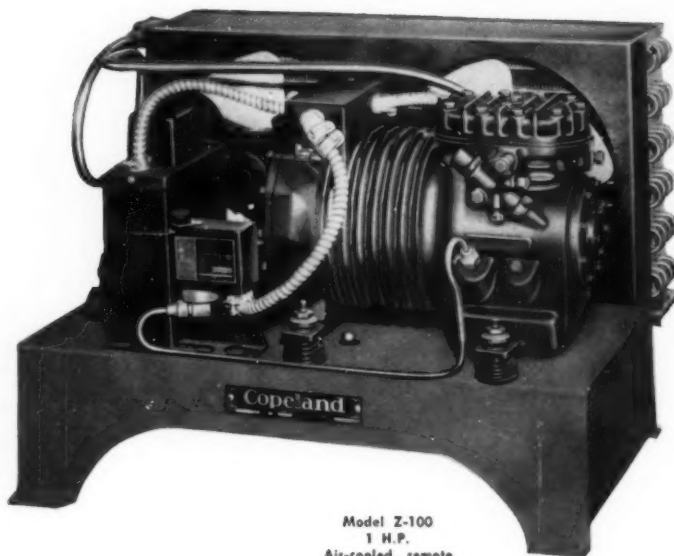
to sell **COPELAMETIC**
THE *Accessible* HERMETIC



Just give 'em the facts. That's all.
It buttons up your case and closes the sale.

Being a direct-drive motor-compressor, the compact Copelametic eliminates troublesome belts and seals. Manual oiling is not required. Those are facts a dealer likes to hear. But, your prime sales advantage with Copelametic is "accessibility." If the time ever comes when adjustment or parts replacement is advisable, you don't need to ship it back to the factory. That's where Copelametic differs from most hermetics. It can be serviced right on the spot.

Field-proved Copelametic units are quiet-running and highly efficient. There are sizes for all applications, remote or self-contained. Air-cooled models from 1/6 H.P. through 3 H.P., water-cooled from 1/3 H.P. through 7 1/2 H.P. Air-water combination in sizes through 3 H.P.



Model Z-100
1 H.P.
Air-cooled, remote
COPELAMETIC

WRITE FOR CATALOG C-53



REFRIGERATION UNITS (OPEN-TYPE AND COPELAMETIC) WATER COOLERS

Copeland
DEPENDABLE *Electric* REFRIGERATION

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

Circle No. 1 on Reader Service Card

choose the valve that fits the job

instead of making the job fit the valve

ALCO T SERIES THERMO VALVES

*Two types to
cover every
application:*

STRAIGHT-THROUGH CONNECTIONS— ANGLE CONNECTIONS

*inside they're identical —
parts are interchangeable
easy to service*

*For all temperature ranges —
all operating conditions.
Please specify type desired
when you order.*



ASK YOUR ALCO WHOLESALE FOR BULLETIN 171-53



Designers and Manufacturers
of Thermostatic Expansion
Valves; Evaporator Pressure
Regulators; Solenoid Valves;
Float Valves; Float Switches.

ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

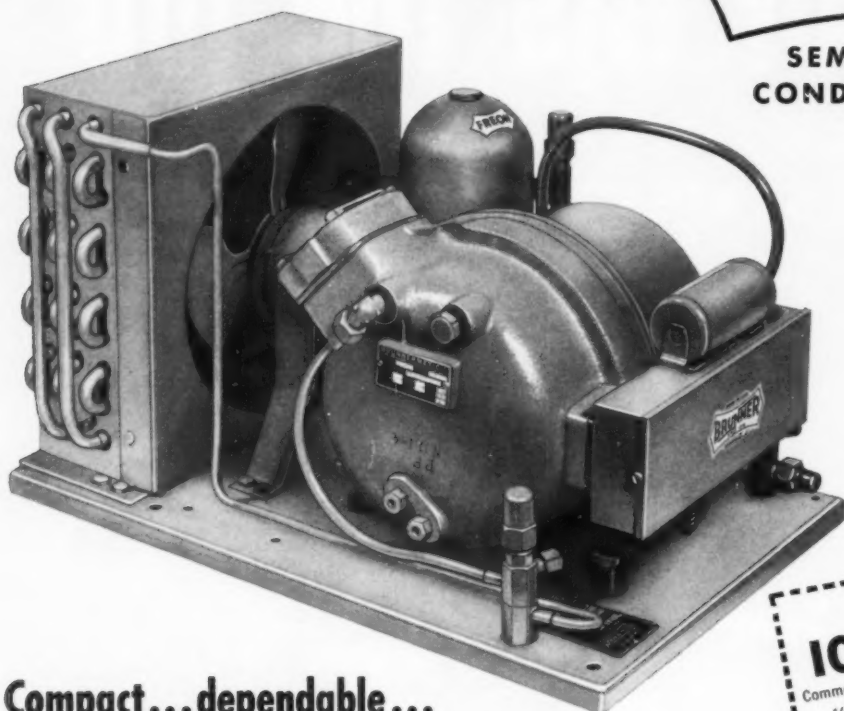
Circle No. 3 on Reader Service Card

here it is!

...the new

BRUNNER-METIC

**SEMI-HERMETIC
CONDENSING UNIT**



**Compact...dependable...
designed for field servicing!**

You asked for it—and now Brunner has it—a semi-hermetic condensing unit engineered for top performance and on-the-job servicing right down to the last bolt! Years of research and refrigeration know-how have put dozens of exclusive features into these new Brunner units—features that will mean more satisfaction for your trade—more profits for you...

SEE THE BRUNNER-METIC NOW at your Brunner Wholesaler's—or write us for complete details today...

THE BRUNNER COMPANY, Dept. G-74, GAINESVILLE, GA.
Brunner Manufacturing Company, Utica, N.Y.
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario

NOW AVAILABLE IN
10 MODELS
Commercial and Low Temperature Applications
 $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1 H. P. AIR COOLED

SEE IT! ORDER IT!
—at your Brunner Wholesaler's
NOW!

...ANOTHER reason why

BRUNNER
SINCE 1906

means
more in '54



Established in 1944 as
THE REFRIGERATION INDUSTRY, this
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COMMERCIAL REFRIGERATION & AIR CONDITIONING

JULY, 1954

VOLUME 11, NO. 7

IN THIS ISSUE

YOU DON'T HAVE TO BE BIG TO SELL BIG!	34
WAREHOUSE IS "WRAPPED IN GLASS"	35
GIVE YOUR BUSINESS A LIFT	36
KEEP TAB ON YOUR BUSINESS—DAY BY DAY	38
"ALL THE COLD BEER YOU WANT"	41

AIR CONDITIONING SECTION

PUT THE HEAT PUMP ON THE SPOT	67
BUILD SALES FOR THE BUILDER	68
GRILLES, REGISTERS AND DIFFUSERS	70
A practical guide to selection and location	
THE OUTLOOK FOR AIR CONDITIONING	74

DEPARTMENTS

About People	23
Applications Manual For Contractors	61
BTU's	33
Commercial Refrigerator Sales News	42
Contractor News	93
Here's How	111
New Products	80, 101
Opportunities	113
Refrigeration Industry News	51
Useful Literature	77, 99
Index to Advertisers	114

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Why You Can Have Confidence



genetron[®]

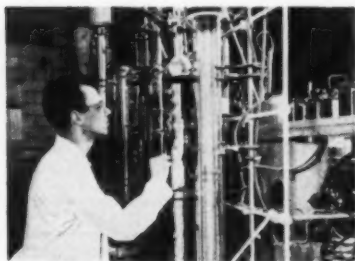
the great new name
in basic
refrigerants!

genetron WHITE LABEL-12
DICHLORODIFLUOROMETHANE

genetron ORANGE LABEL-11
TRICHLOROMONOFUOROMETHANE

In refrigerants, remember the name "Genetron" always identifies General Chemical's great new line of "super-dry" refrigerants. . . . And the label color code always means—

WHITE LABEL=Dichlorodifluoromethane • ORANGE LABEL=Trichloromonofluoromethane



EXTENSIVE RESEARCH

"Genetron" refrigerants are products of General Chemical's extensive, continuous fluorine research program which has produced over 90 fluorine products for science and industry.



SOUND BASIC POSITION

General Chemical is a pioneer and pace-setting leader in the field of fluorine chemicals. Its position is basic and sound—including mines and reserves for necessary raw materials.

when you see this label...

Any time you buy a product from a new source, you naturally want to know more about the manufacturer to make sure he and his products are dependable. That's only smart business... and it's certainly doubly important when the product is as basic and vital as the refrigerants you use.

What about General Chemical—the maker of “Genetron” refrigerants?

Serving Behind the Scenes in Your Daily Life

Just this—the steel in your family automobile and refrigerator was quite likely processed with General Chemical's sulfuric acid... the water you drink may well have been purified with General's “Alum”, just as the clothes you wear and the food you eat probably have been produced with the help of one or a dozen other “G.C.” products.

“Basic Chemicals for American Industry”

In other words, General Chemical is one of America's greatest producers of basic industrial and agricultural chemicals... and has been since 1899. It supplies every major industry that uses chemicals... from petroleum to pharmaceuticals... and has served a good part of its customers since they first opened their doors. Its slogan—*Basic Chemicals for American Industry*—typifies the scope and depth of its services.

Products of

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston • Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis • Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

Backs its Products All The Way

Now—with its large-scale production of “Genetron” organic fluorine refrigerants, General Chemical is serving the air conditioning and refrigeration industry in the same sound, steady manner that has earned it the confidence of thousands of customers in so many other fields.

So, whenever you see the “Genetron” label on a refrigerant cylinder or drum—remember that General Chemical is the company behind this great new name in basic refrigerants... and it backs them all the way!

Available in all standard container sizes:

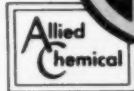
Genetron WHITE LABEL-12 is shipped in 10-lb., 25-lb., 145-lb., and one-ton (2,000 lbs.) cylinders.

Genetron ORANGE LABEL-11 is shipped in 100-lb., 200-lb. drums, and one-ton (2,000 lbs.) cylinders.

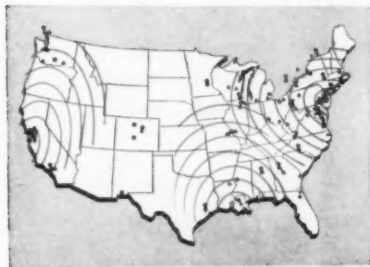


FOR FURTHER INFORMATION...

Write or 'phone the nearest General Chemical office listed below. Ask for **FREE TECHNICAL SERVICE BULLETIN 11.12A** on “Genetron” Refrigerants.

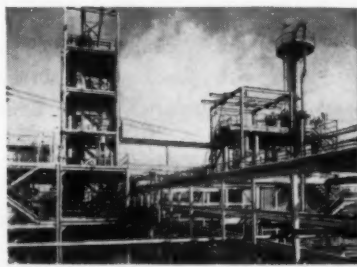


America's Foremost Producer
of Fluorine Chemicals



NATION-WIDE SERVICE

General Chemical has almost 100 service and supply points throughout the United States and Canada. Production centers for fluorine chemicals are indicated by stars.



SUPERIOR FACILITIES

General Chemical's “Genetron” plant at Baton Rouge, Louisiana, is one of the most modern fluorine refrigerant plants in America, employing special new manufacturing processes.

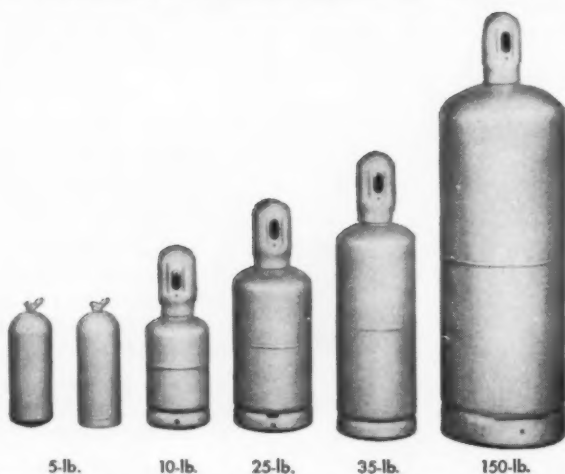


EXACTING PROCESS CONTROL

The extremely low moisture content and high purity of “Genetron” refrigerants is a result of advanced manufacturing methods and unique process control techniques.

**DON'T
SETTLE
FOR LESS**

use
Prest-O-Lite
Trade-Mark
**CYLINDERS FOR
REFRIGERANTS**



- ✓ Rugged, sturdy construction
- ✓ Uniform sidewall thickness
- ✓ Lightweight—easy to handle
- ✓ Finest workmanship
- ✓ Best appearance
- ✓ Tested far beyond all codes
- ✓ Extra years of trouble-free life
- ✓ They're economical!

You are *sure* that your refrigerant gas containers will give you many years of dependable service—and save you extra dollars—when you own PREST-O-LITE cold-drawn cylinders. They're built by the company which has been the largest manufacturer and *user* of compressed gas cylinders for almost half a century. In each step of design and fabrication the ultimate in gas containers is achieved—and this skill and experience is passed on to you with every PREST-O-LITE cylinder you get. It's no wonder that refrigerant cylinder buyers who have compared feature for feature have found out they are getting the greatest value with top-quality PREST-O-LITE cylinders.

Available in sizes ranging from 5-lb. to 150-lb. capacities—with valve, and cap on all but 5-lb. styles. A few of the popular squat-type cylinders are shown above. You'll like their good-looking appearance, with glossy metallic bronze finish. **WRITE TODAY** for full information and prices—select the PREST-O-LITE cylinder that fits *your* needs exactly.

MADE BY

Linde

"Prest-O-Lite" is a registered trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY

A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

30 East 42nd Street  New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

Circle No. 6 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

non-foaming Ansul oil

reduces slugging
and carry-over

Ansul Non-Foaming Refrigeration Oil reduces slugging and hammering within the compressor. Broken valves and other damaged parts are eliminated. Compressors run quietly too.

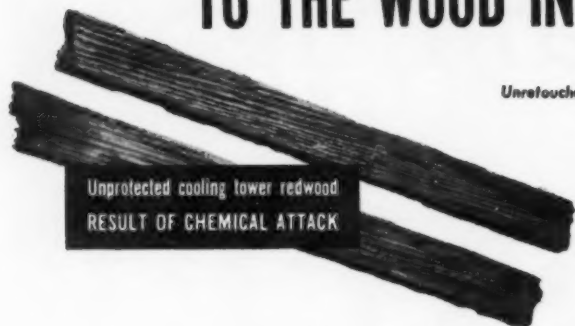
Non-foaming oil prevents excessive oil build-up in the evaporator due to carryover . . . makes it possible for the evaporator to work at peak efficiency, not restricted by a heavy insulating film of oil.

With Ansul Non-Foaming Oil in the compressor, vital parts get the instant lubrication they need to prevent wear. Ansul Oil works on moving parts where it is needed most.

When you use Ansul Non-Foaming Oil, plugged capillaries become less of a danger and less strain is placed on oil separators. Specify Ansul Oil, get the important benefits of Non-Foaming Oil plus high lubricity and stability, low moisture and low wax. Write today for more information, ANSUL CHEMICAL COMPANY, Refrigeration Division, Dept. D-2, Marinette, Wisconsin.



LOOK WHAT CAN HAPPEN TO THE WOOD IN COOLING TOWERS



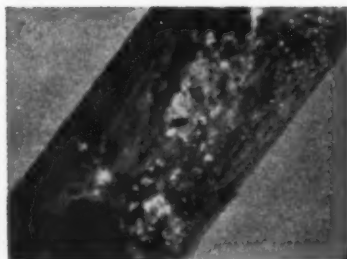
Unprotected cooling tower redwood
RESULT OF CHEMICAL ATTACK

Unretouched photographs



Unprotected cooling tower redwood
RESULT OF FUNGUS ATTACK

PRESSURE CREOSOTING ADDS YEARS OF LIFE TO HALSTEAD & MITCHELL COOLING TOWERS



FUNGUS ROTTED UNPROTECTED DECKING

Unretouched photographs

CLEAN PRESSURE-CREOSOTED DECKING



Examine these unretouched photographs carefully. Constantly wetted wood decking in a cooling tower is subject to immediate attack by fungus and marine parasites. It is also subject to chemical deterioration from acids in water. All wood used in Halstead & Mitchell Cooling Towers is protected against these twin enemies.

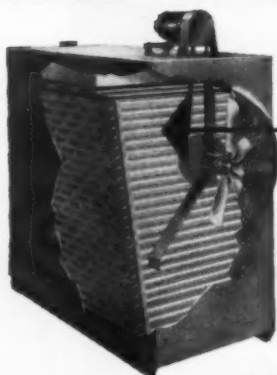
WHY PRESSURE CREOSOTING?

Creosote . . . with 162 elements toxic to fungus growth and parasites . . . also makes wood more resistant to chemical attack. Deep penetration of the wood by Koppers Pressure-Creosoting gives the longest possible wetted decking life. Therefore, all Halstead & Mitchell Cooling Tower decks are Pressure-Creosoted, and are guaranteed against rotting due to fungus growth . . . for 20 years!

ONLY HALSTEAD & MITCHELL OFFERS THE

20-Year Guarantee!

ON THE WETTED DECK SURFACE against rotting by fungus attack



2 thru 100 Tons

Sheet-Steel Cabinets,
5-times protected
Stainless Steel Fans and Shafts
Weather Shielding
Everdur Bolts for ease of
disassembly at any time.



Halstead & Mitchell

At Leading Refrigeration & Heating Wholesalers Everywhere

OFFICES: Bessemer Bldg., Pittsburgh 22, Pa.

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JULY, 1954 • COMMERCIAL REFRIGERATION



Peerless

PEERLESS PROVIDES

"Private" **MOTOR FACILITIES**

* Original Equipment Manufacturer

● When you're trying to make a standard motor fit a custom job—when you need special characteristics in your motors—when you wish you had your own motor department—what you really need is Peerless. Let me tell you about Peerless — Let's say you require a motor with special characteristics — more torque, higher speeds, or smaller dimensions—talk it over with our engineers. Chances are the problem won't look so tough to us since we've been building special motors for 60 years. We'll solve your "spec" problem. Then, together, we'll tackle production questions and

set delivery dates to meet your needs. This integration of facilities and thinking produces such outstanding motors that we call them Gold Seal Motors. You may wish to talk to some of the people that use them. Ask us and we'll refer you. To get started, call Peerless. Ask for me if you like. I'll see that you talk to the engineer who can help you most. No obligation to you.

You can have the motor you want, custom designed for your product, at a competitive price. We build them . . . Peerless Gold Seal Motors.

Elsh Krohler
President

THE PEERLESS ELECTRIC COMPANY
MOTORS

● FANS

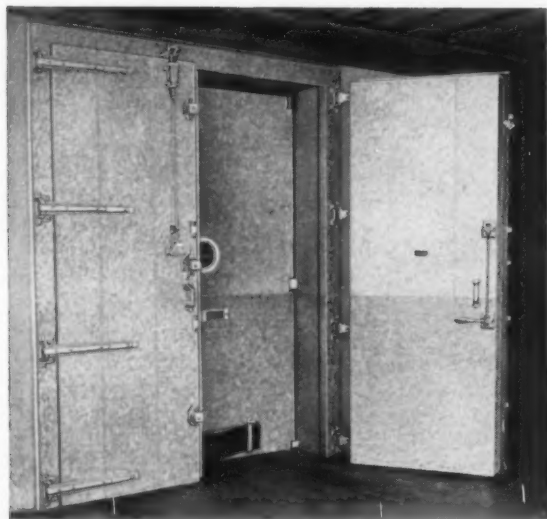
WEST MARKET ST., WARREN, OHIO
BLOWERS

and AIR CONDITIONING • JULY, 1954

Circle No. 9 on Reader Service Card



Modern Ideas in CITY ICE COMPANY Warehouse Include JAMISON Lo-Temp Doors



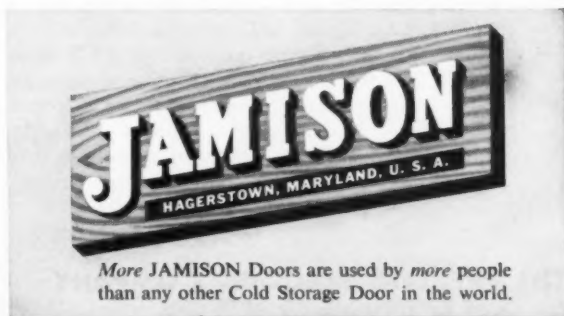
Light in Weight, Lo-Temp Doors are easy to open or close. Metal cladding, combined with the kick plates on the back, adds further to the strength of the doors and enables them to withstand constant battering.



Efficiency typifies the modern City Ice Company warehouse in Denver. It's evident in the latest tip-up type of wall construction . . . and in the three Lo-Temp Double Vestibule Doors which are used for frozen food storage at -15° to -20°F .

Opening off the loading dock, these metal-clad infitting doors maintain a tight seal and provide ample insulation no matter what the outside temperature. Because of their large size, the doors also speed handling by giving lots of clearance for loaded fork lift trucks. An extra set of Auto-Close Doors forms an air lock behind the Double Vestibule Doors to minimize cold loss during handling.

For additional information about cooler or freezer doors, consult your architect or write to Jamison Cold Storage Door Company, Hagerstown, Maryland, U.S.A.



When he's **LINED UP**..... but not **SIGNED UP**...



Be ready to sign him up with
COMMERCIAL CREDIT PLAN FINANCING

MOST of your prospects need their working capital and usual lines of credit for *current* operations. To make sure they buy *now* . . . and from *YOU* . . . include **COMMERCIAL CREDIT PLAN** financing in your recommendations. More than 300 offices to serve you nationally. When can we tell you our story? Phone our office in your city or write or wire **COMMERCIAL CREDIT CORP.**, 14 Light St., Baltimore 2, Maryland.

**COMMERCIAL CREDIT
 CORPORATION**

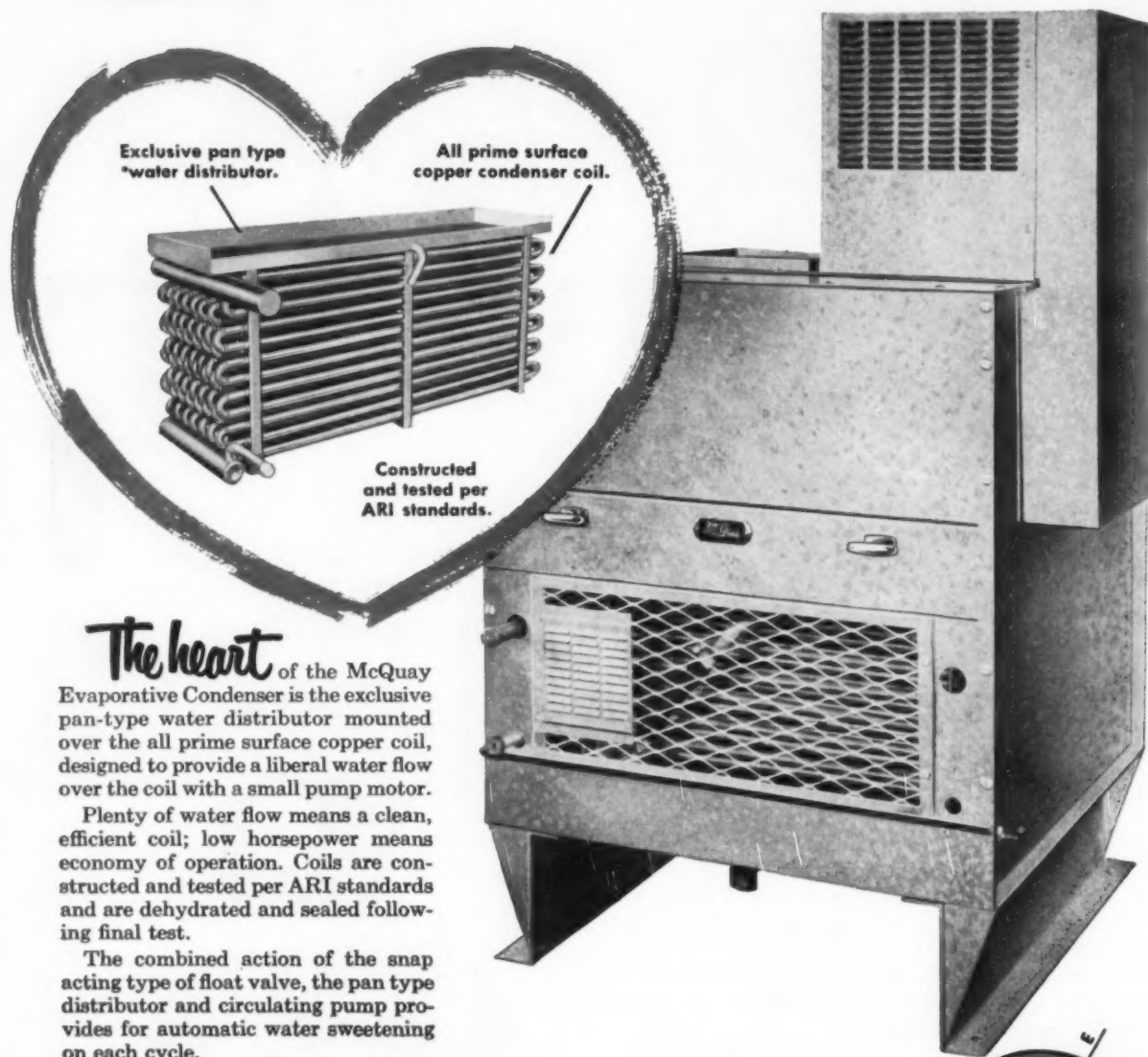
A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$145,000,000
 . . . offices in principal cities of the United States and Canada.



Exclusive

in the rugged *McQuay* Evaporative Condensers

FOR FREON-12, FREON-22 AND METHYL CHLORIDE



The heart

of the McQuay Evaporative Condenser is the exclusive pan-type water distributor mounted over the all prime surface copper coil, designed to provide a liberal water flow over the coil with a small pump motor.

Plenty of water flow means a clean, efficient coil; low horsepower means economy of operation. Coils are constructed and tested per ARI standards and are dehydrated and sealed following final test.

The combined action of the snap acting type of float valve, the pan type distributor and circulating pump provides for automatic water sweetening on each cycle.

For complete information on the thoroughness with which McQuay engineers designed a unit for efficient, long-lasting performance and ease of maintenance, see your McQuay refrigeration wholesaler or write for catalog No. 600, McQuay Inc., 1643 Broadway N.E., Minneapolis 13, Minn.

McQuay INC.

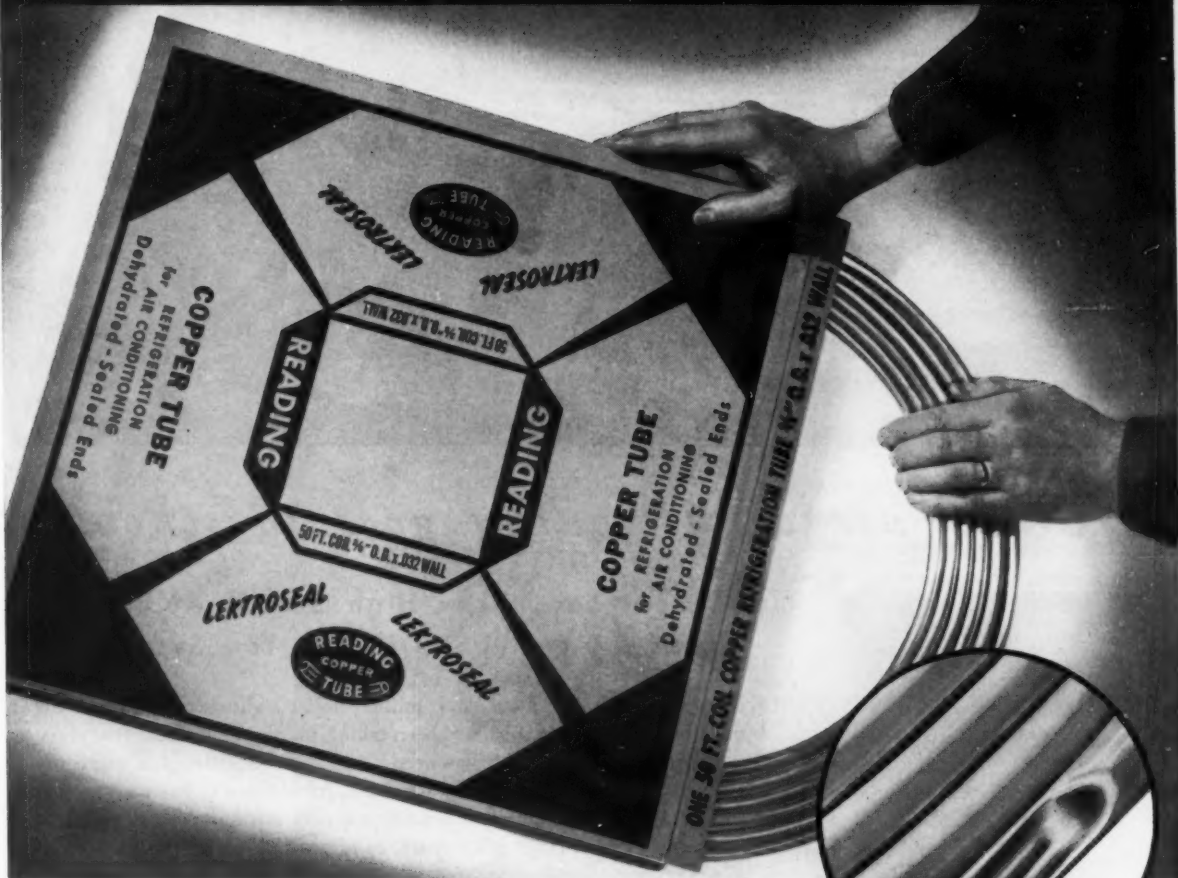


AIR CONDITIONING • REFRIGERATION • HEATING

Circle No. 12 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

FIRST STEP in A Quality Installation...



READING "LEKTROSEAL" COPPER REFRIGERATION TUBE

Soft temper for easier forming . . . dehydrated—with crimped ends to seal out all moisture and dirt . . . and keep the inside surface absolutely clean. Comes in handy 50-foot coil packed in its own convenient protective carton, clearly labeled for easy identification. To be sure of the job—be sure to specify Reading.



Sold Through
Wholesalers
Only

READING TUBE CORPORATION

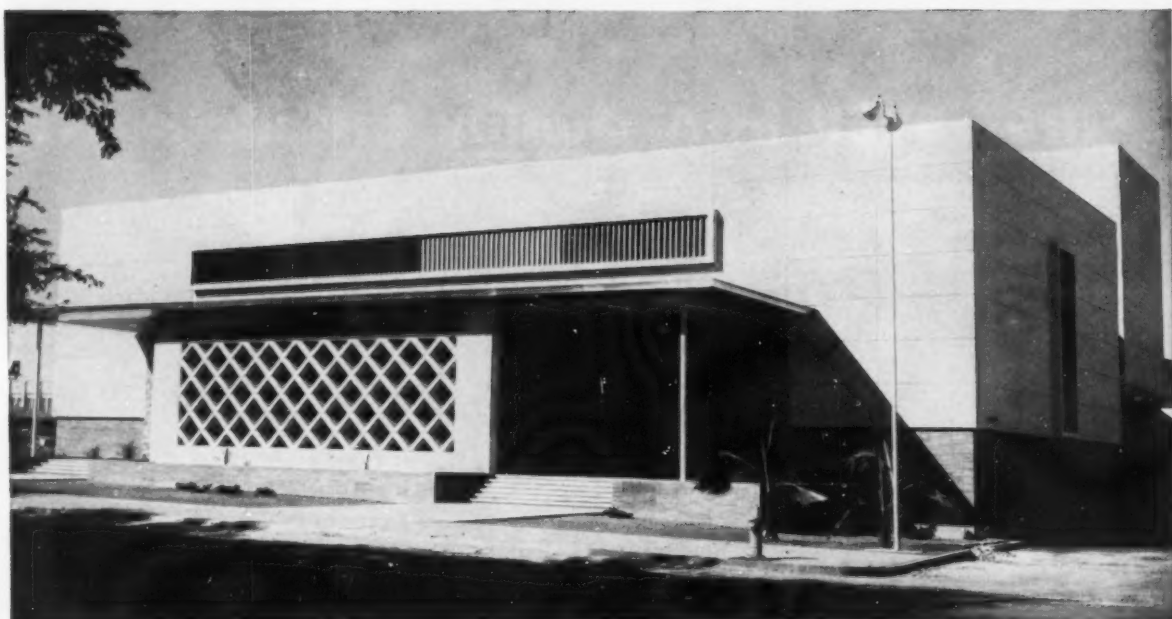
EMPIRE STATE BUILDING, NEW YORK 1, N. Y. PLANT: Reading, Pa.

Distribution

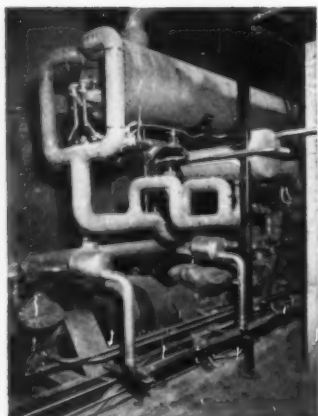
Depots:

- READING, PA.
- WOODSIDE, L. I., N. Y.
57-17 Northern Blvd.
- CHICAGO, ILL.
724 W. 50th St.

- HOUSTON, TEXAS, 1121 Rothwell St.
- ATLANTA, GA., 690 Murphy
Ave., S.W., Unit 5, Bldg. B
- CLEVELAND, OHIO
4615 Perkins Ave.



Acme air conditioning goes to school



Architect: Claude Beelman
Contractors: Lembke, Clough & King
Refrigeration Installation: Western
Heating and Ventilating Co.

1500 Seat Las Vegas High School Auditorium Uses 6 Acme Units in 160 Ton System

Las Vegas Union High School's new million dollar auditorium illustrates the advances in school design that have been taking place over the past few years. More and more the approach has been to provide facilities that make the local school a center for community activities. In addition to having a seating capacity of 1500, this auditorium is equipped with ultra-modern stage facilities, a spacious lobby, large office space, band practice rooms, a Board room and a warehouse.

The entire building is air conditioned with refrigeration and hot water heating. 480 GPM of water, chilled from 58° to 50° for the 160 ton cooling load, is provided by one 60 ton and one 100 ton Acme Dry-Ex Water Chillers. Condensing and water conservation for the system is provided by a 160 ton Acme Evaporative Condenser. To improve overall system efficiency, 2 Acme heat exchangers and an Acme Liquid Receiver have been installed.



ACME INDUSTRIES, INC.

Mfgs. of a complete line of Air Conditioning and Refrigeration Equipment

JACKSON, MICHIGAN



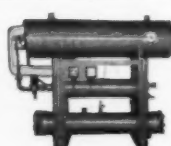
Evaporative Condensers
Cooling Towers
Floor-type Unit Coolers



Direct Expansion
(Dry-Ex) and Flooded
Liquid Chillers
Heat Exchangers,
Oil Separators



Shell and Tube, Shell
and Coil Condensers
Receivers, Pipe Coils



Packaged Liquid
Chillers to 225 tons



Flow-Temp Heat
Pumps
Flow-Cold Liquid
Chillers



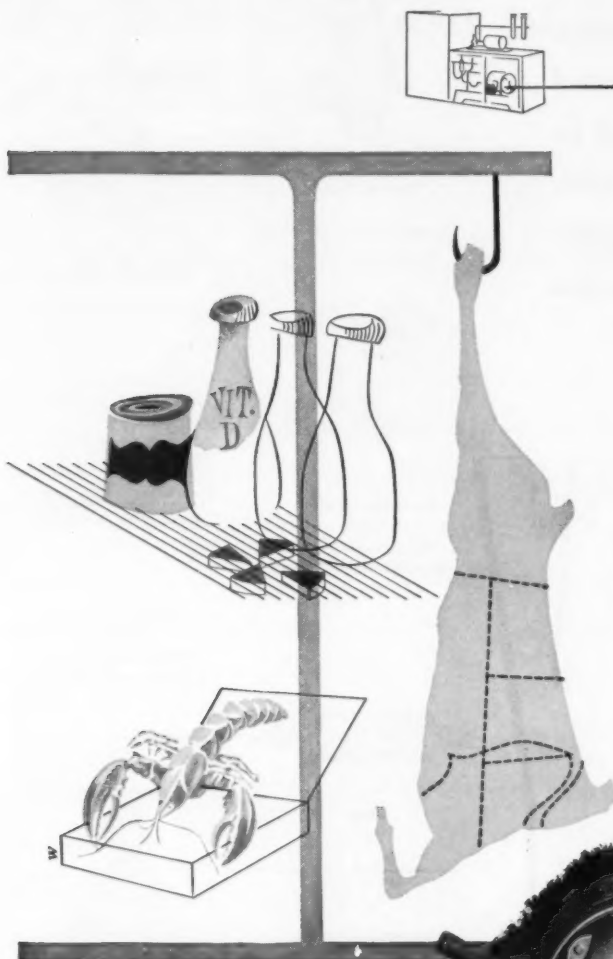
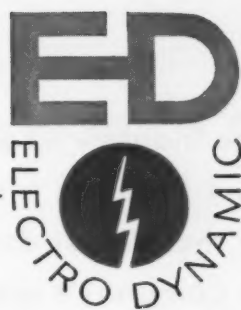
Remote Room
Conditioner

Continuously serving the air conditioning and refrigeration industry since 1919

Circle No. 14 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

THE MARK OF **EXTRA** DEPENDABLE
REFRIGERATION AND
AIR CONDITIONING EQUIPMENT

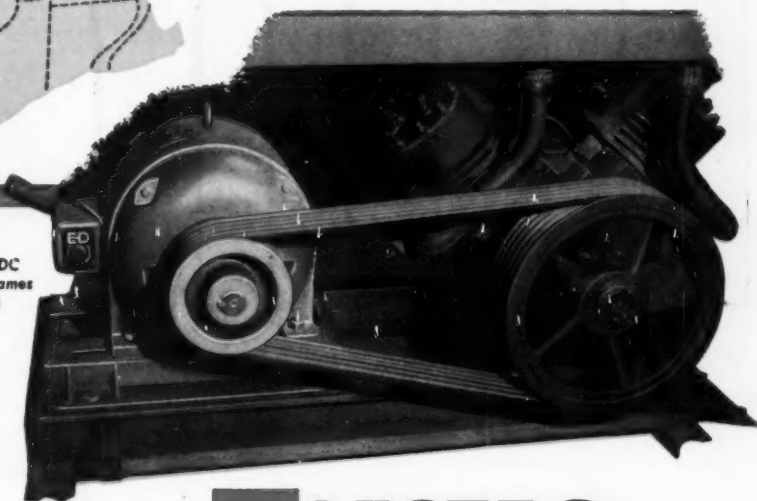
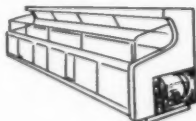
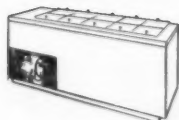


The red "power spot" on refrigeration or air conditioning equipment means powered by *Electro Dynamic*, the most dependable motors *ever* available to industry.

For proof of this *extra dependability* send the coupon below for your copy of "**MOTOR SHOWDOWN**", a new candid report on comparative results of motor performance tests* conducted in accordance with A. I. E. E. standards.

*Tests certified by J. Arthur Balmford, Professor of Electrical Engineering at a leading Eastern University.

1 to 250 hp., AC and DC
N.E.M.A. standard frames
All types of enclosures



E_{xtra} **ELECTRO DYNAMIC**
ependable motors

ELECTRO DYNAMIC
Division of General Dynamics Corporation
164 Avenue A, Bayonne, New Jersey



Please send me a copy of "**MOTOR SHOWDOWN**" and the new catalog of Electro Dynamic industrial motors.

NAME _____
COMPANY _____
ADDRESS _____

Circle No. 15 on Reader Service Card
and **AIR CONDITIONING • JULY, 1954**

The Industry's confidence
in Henry Products is reflected
by the largest demand in
the Company's production
history over the past
40 years

HENRY

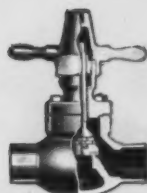
Valves, Driers and Strainers

Henry Valve Co.

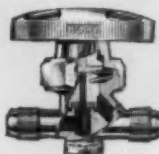
Melrose Park, Illinois (Chicago Suburb)
Cable: Hevalco, Melrose Park, Illinois



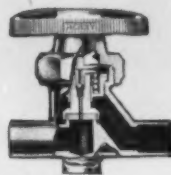
Relief Valve



Wing Cap Valve



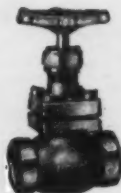
Packless Valve
With
Balanced-Action
Blue Bantam Type



Packless Valve
With
Balanced-Action
Standard Type



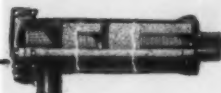
Drier



Ammonia Valve



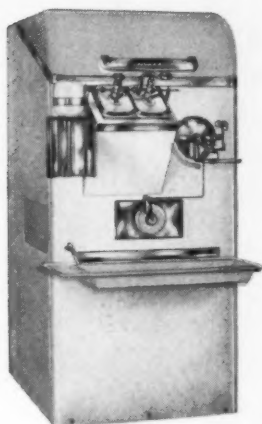
"Y" Strainer



Angle Type Drier

Valves • Driers • Strainers • Control Devices and Accessories for Refrigeration • Air Conditioning and Industrial Applications

Mills Industries announces the introduction of a new milk shake machine—the

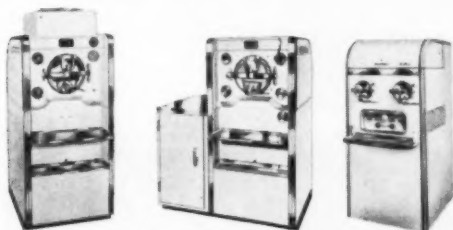


Millshake

Millshake is the only machine designed to make a complete milk shake. It holds and freezes mix, supplies 3 flavors—satisfying all necessary requirements, and contains its own sanitary, shielded blender. It makes fabulous profits for its owners when averaging only a few shakes per hour—and it can produce *hundreds* of shakes per hour when required. Any and every store selling milk shakes is your potential and likely prospect for the *Millshake*.

An advertising campaign is breaking in many publications in June and July including The Saturday Evening Post. Inquiries received are sent to our distributors.

Would you like to sell the *Millshake*? Preliminary orders and sales research indicate that the *Millshake* will be the biggest seller of all time. To do an even bigger job we need more active, well-financed companies or individuals to sell the *Millshake*. If you would like more complete information on the Mills Distributorship, mail the coupon or write on your company letterhead.



Makers of the World's Finest
Continuous and Other Retail Freezers
for nearly a quarter century

MILLS INDUSTRIES, Inc.
4100 Fullerton Avenue • Chicago 39, Illinois

Mr. A. E. Wilson, Sales Manager, Freezer Division
Mills Industries, Incorporated
4100 Fullerton Avenue, Chicago 39, Illinois

Dear Mr. Wilson:

Please send me complete details on Mills Distributorship Franchise.
I am interested in the following territory

Name _____

Address _____

City _____ Zone _____ State _____

Known for Quality

No matter how well built
the air conditioning or
refrigeration equipment
you install...

if its performance depends
on automatic controls...

it can be no better than
the controls with which
it is equipped.



QUALITY HAS ALWAYS BEEN THE WHITE-RODGERS POLICY...

If you had spent 17 years learning how to build the very best product in your industry you would then find yourself expressing your philosophy much as we have done in the panel above.

White-Rodgers has never — and never expects to — build anything but the finest controls that can be made. You probably already know this, but we feel it worth emphasizing at this stage in our industry's development.



WHITE-RODGERS
Controls FOR REFRIGERATION · HEATING
AND AIR CONDITIONING

ST. LOUIS 6, MO.

Circle No. 18 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

1 of the many reasons why you will find it pays to sell Chrysler Airtemp

A 5-year Compressor Warranty that means more

TO YOU AND TO
YOUR CUSTOMERS!

● Pioneer of "Packaged" Air Conditioning, Chrysler Airtemp was also the originator of the 5-Year Warranty on compressors in "Packaged" units. Later, Chrysler Airtemp was the first to take the 5-Year Warranty out of the "optional" class, making its Warranty applicable on all "Packaged" Air Conditioners shipped from its factory. And today, there are important features of the Chrysler Airtemp 5-Year Compressor Warranty which make it mean more—to you and to your customers.

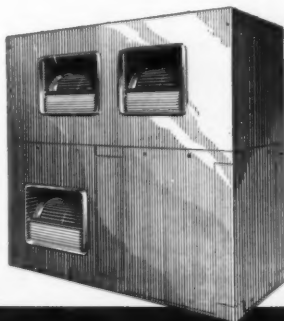
The 5-Year Warranty which now backs every Chrysler Airtemp "Packaged" Air Conditioner sold not only covers replacement of the compressor. It includes, also, payment of freight and labor.

It's a comprehensive warranty—one that gives you and your customers a clean deal. And the assurance of satisfaction which it allows you to pass on to your prospects constitutes another good reason why you will find it easier to sell the "Packaged" Air Conditioning which most people buy—Chrysler Airtemp. Stop now to review additional reasons listed below—then mail coupon for complete details.

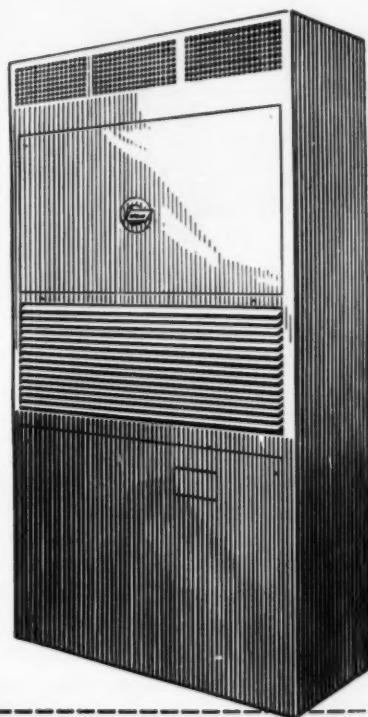
7 more advantages you sell with when you sell Chrysler Airtemp . . .

- **Consumer Confidence**—people know the Chrysler Airtemp name—associate it with engineering leadership—have confidence in the products which carry it.
- **Lower Installation Cost**—super-quiet operation permits use within or very close to areas to be cooled, reducing amount of ductwork required. All units shipped completely factory-assembled and tested.
- **Assured Dependability**—Chrysler Airtemp pioneered "Packaged" Air Conditioning in 1937, has more units in use today than anybody else. All units are manufactured to exacting standards of precision in a modern, windowless, completely air conditioned factory.
- **Advanced Engineering** by Chrysler Airtemp offers your customers features that mean more because they do more for them.
- **More Complete Line**—9 models meet all requirements.
- **More National Advertising**—6 big campaigns reaching all prospects for air conditioning; 22 campaigns in trade journals constantly selling the particular benefits of Chrysler Airtemp "Packaged" Air Conditioning to individual businesses and professions which make up your most important markets.
- **More Local Selling Helps**—the broadest line of tested and proved local selling helps for dealers.

"Packaged"
Air-Cooled Air
Conditioners—no
water needed, no
plumbing required.
2, 3 and 5 H.P.



"Packaged" Air
Conditioners in 6
water-cooled models,
from 2 to 15 H.P.



CHRYSLER AIRTEMP

heating • air conditioning for homes, business, industry

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Airtemp Division of Chrysler Corporation
P.O. Box 1037, Dayton 1, Ohio

CR & AC-7-54

I would like to know more about the Chrysler Airtemp Franchise.

Name _____

Address _____

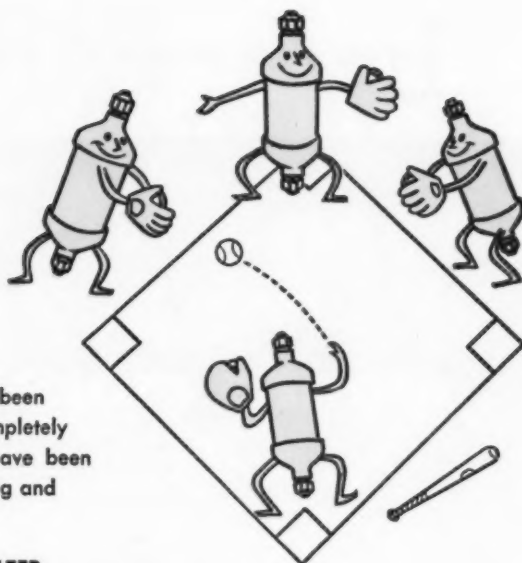
City _____

Zone _____

State _____

MUELLER BRASS CO.

deluxe drier . . . the one that covers all bases



1st

THE ONE PROVED BY 3,000,000 IN SERVICE

Three million Mueller Brass Co. Deluxe Driers have been installed in commercial refrigeration systems. The completely satisfactory service they have given wherever they have been used is certain proof of the thoroughly effective cleaning and drying job they do.

2nd

THE ONE WITH THE EXCLUSIVE CONE SCREEN FILTER

The cone screen filter of Mueller Brass Co. Deluxe Driers is a patented filter-strainer unit filled with chemically cleaned pure wool. And the filter area has been increased 30%, providing a cleaning capacity approximately seven times that of the usual disc.



3rd

THE ONE THAT REALLY REMOVES MOISTURE AND ACIDS

. . . AND ALWAYS HAS! PA 400 Super Silica Gel, a new, more effective desiccant in Mueller Brass Co. Deluxe Driers, provides up to 98% more drying capacity. In addition, PA 400 not only removes moisture that may cause formation of acids in a system but also removes these acids if they are already present prior to the installation of the drier.

HOME

THE HOME OF MUELLER BRASS CO. DELUXE DRIERS . . . the large, modern plant in Port Huron, Michigan. Mueller Brass Co. was one of the pioneers in the development of reliable refrigeration and air conditioning equipment. Complete laboratory, research and manufacturing facilities insure the production of valves, driers, fittings and copper tube bends and coils to the highest standards of quality.



Driers and Filters



Wrot Copper Fittings and Copper Tube



Flare Fittings



Liquid Indicators



Valves



Write today for big, new Streamline Refrigeration Products Catalog . . . just released!

MUELLER BRASS CO. PORT HURON 10, MICHIGAN

Circle No. 20 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

How do you sell refrigeration to the prospect who says . . . "I JUST CAN'T AFFORD IT"

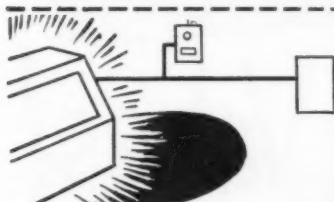
Here's how!



1. Understand his problem. He pays his supply bills daily . . . there just isn't enough money at the end of the month to make lump-sum payments.



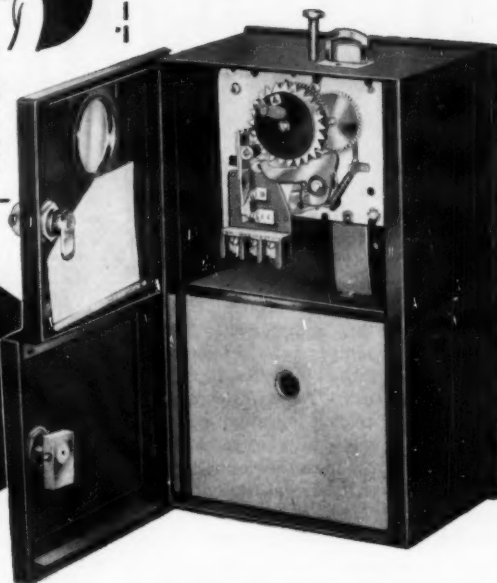
2. Explain to him about the pay-as-you-go Meter-Matic sales plan. He'll see that this way he can afford the refrigeration he needs.



3. Installation is simple . . . in just a few minutes you hook up the meter between switch box and refrigerator. If money isn't deposited daily, current to refrigeration is cut off.



4. You have a happy customer—because he pays for his refrigeration the "painless" way—with small-change daily. You've made a sale that would be impossible to make any other way.



METER-MATIC

**COIN METER
REFRIGERATION SALES PLAN**

GET THE COMPLETE STORY

- FULL DETAILS . . . Specifications, prices, etc.
- METER PLAN BROCHURE . . . to help you sell
- FREE SELF-MAILERS . . . for mailing to prospects

MAIL THIS COUPON NOW!

INTERNATIONAL REGISTER COMPANY

2622 W. Washington Boulevard, Chicago 12, Illinois

Send me Meter-Matic Sales Kit No. 74M. Be sure to include a free supply of 25 self-mailers for mailing to my prospects.

Company _____

My Name _____

Address _____

City _____ Zone _____ State _____

30



is old stuff in
refrigeration
thanks to

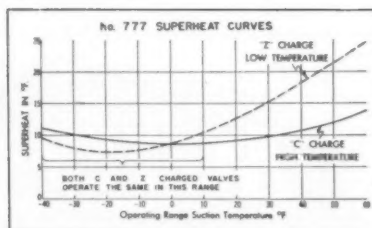
Detroit Double Duty Valves!

Here are three D's to keep in mind whenever you buy expansion valves—**Detroit Double Duty Valves!** Yes, Detroit expansion valves give you double-duty or dual purpose performance because they're designed for either high or low temperature applications. Take a look at the illustrated superheat curves of Detroit 777 and 673 expansion valves and note that both high and low temperature valves give the same excellent performance in the low temperature range. This can be a real time saver to you in an emergency. Specify **Detroit Double Duty Expansion Valves!**

NOTE: High temperature valve used for low temperature work may require that the suction line be throttled during pull-down.

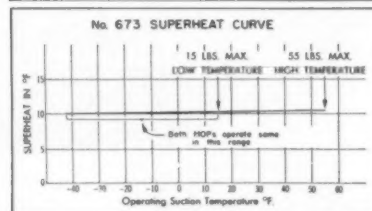
No. 777

- Capacities—1/8 to 2 tons Freon-12—Standard Valve; 1 to 3 tons Freon-12—External Equalizer.
- "C" and "Z" cross charges available.
- Accessible and easy superheat adjustment.
- Available with or without external equalizer.



No. 673

- Capacities—1.2 to 3.6 tons Freon-12.
- Adjustable superheat.
- Gas charged for motor overload protection and quick response.
- Duraflex bellows resist corrosion and insure long, trouble-free service.



DETROIT CONTROLS Corporation

8900 TRUMBULL • DETROIT 8, MICHIGAN

Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

Representatives in Principal Cities • Canadian Representatives in Montreal, Toronto, Winnipeg—Railway and Engineering Specialties, Ltd.



AUTOMATIC CONTROLS for REFRIGERATION

AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

ABOUT PEOPLE

R. E. Engel has been appointed sales representative in the Oklahoma-Kansas area for Wolverine Tube Division of Calumet & Hecla, Inc., according to an announcement by C. T. Fuller, southwestern district sales manager.

Engel was formerly office sales representative in the company's general sales office in Detroit. In his new assignment he will headquarter in newly opened offices at 304-A Daniel Building, Tulsa, Oklahoma.

McIntire Co. has named **R. E. LeRiche**, of Van D. Clothier, Inc., to handle the promotion and sale of DFN driers, filters and strainers in the Northwest area. LeRiche will cover the states of Montana, Idaho, Oregon, Washington, as well as Vancouver, B.C. LeRiche was formerly district manager for Minneapolis-Honeywell and also served as a manufacturer's representative in the refrigeration industry.

Appointment of **Joseph Raufeisen** as chief engineer of Brunner Mfg. Co. has been announced by A. G. Zumbrun, Sr., president.



Raufeisen comes to Brunner from Wescott and Mapes, consulting engineers of New Haven, Conn., where for three years he was manager of the entire mechanical department. A native of Switzerland, Raufeisen was with several U.S. consulting engineering

firms in the 1920's, returning to Switzerland in 1932 to form his own consulting firm. He returned to the U.S. in 1950 and joined Wescott and Mapes. Raufeisen has had over 30 years of experience in air conditioning and refrigeration compressor and unit design.

William R. Browne has been named sales representative for the Fiber Glass Div. of Libbey-Owens-

Ford Glass Co. in the New York area. In his new assignment, Browne will report to Thomas L. Carver, New York district manager.

Jack Moses, construction engineer at the Atlanta district office of Carrier Corp., has been named assistant manager of the construction and service department at the Syracuse home office. Moses will be given the specific assignment of

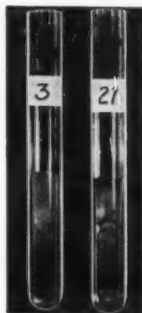
WHY WAIT HOURS?

**THAWZONE
ACTS
FAST**



When you encounter a moisture problem, you might as well clear it up as promptly as possible. Why wait for the moisture to be picked up?

Thawzone travels with the refrigerant to every part of the system where moisture may be. The entire refrigerant charge is in contact with Thawzone after a minute or two of "on cycle".



CORROSION TEST

Here is another test that shows how Thawzone prevents corrosion. Both tubes contain 25cc of "Freon" 12, .025cc water, 4cc oil, and steel strips. Tube No. 3 also contains 1% Thawzone. Tube No. 27 contains 1% antifreeze instead of Thawzone. This unretouched photo shows how the metal protected by Thawzone remained free of corrosion.

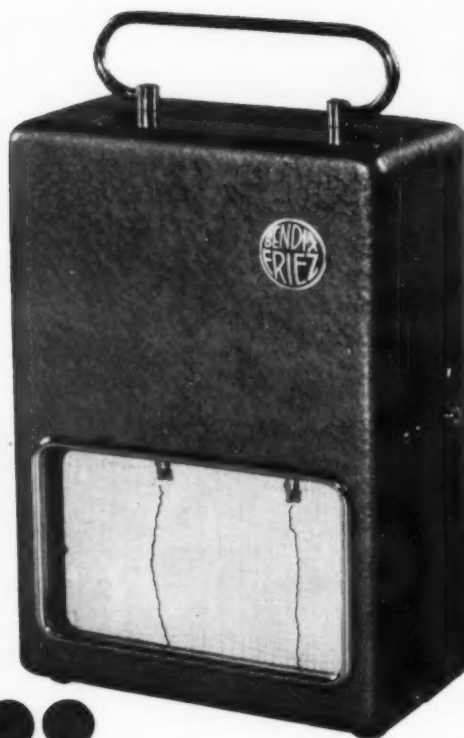
Besides preventing corrosion by DESTROYING water, Thawzone neutralizes acids that promote corrosion.

THAWZONE®

**The Only Product That
Destroys Water...
and Goes to All of it**

1. Reaches all parts of the unit.
 2. Actually destroys moisture . . . not a mere antifreeze.
 3. A patented invention . . . cannot be copied.
 4. No pressure drop possible.
 5. Not subject to oil clogging.
 6. Neutralizes acids, helps prevent corrosion.
 7. Helps prevent copperplating.
 8. Prevents moisture trouble in new units, too.
 9. Costs less. Only about 8¢ per lb. of refrigerant treated.
 10. One product for all "Freon" and methyl units.
 11. Only ¼ oz. per lb. of refrigerant required.
- Practically every wholesaler carries Thawzone.
Highside Chemicals Co., Clifton, N. J.

IF...



you sell . . . install . . . test . . . or service air conditioning . . . this portable recorder of temperature and humidity is of special value.

This precision instrument is as easy to carry as a camera. It records both humidity and temperature on the same chart.

All charts cover a range from 0 to 100% relative humidity. Temperature charts have a Fahrenheit range of 0 degrees to 110 degrees F. or charts are available with a Centigrade range of minus 18 degrees C to plus 43 degrees C. The recorders are built for 10 or 30 hour operation.

Rugged, compact

This is of sturdy design . . . and an instrument of professional accuracy. It is ideally suited for use in small spaces and difficult locations. It is 5 1/2" wide (closed). 8 7/16" high x 3 1/4" deep. Net weight 3 pounds.

Built by Bendix-Friez . . . our 77th year of making precision instruments that set a standard for the world.



FRIEZ INSTRUMENT
Division of Bendix Aviation Corporation
1410 Taylor Ave. Baltimore 4, Md.

Export Offices
BENDIX INTERNATIONAL DIVISION
205 E. 42nd St. New York 17, N.Y., U.S.A.

handling the service technical group of the department. **Urban H. Johnson**, present assistant manager, will become acting manager while manager **George T. Baum** carries out special assignments in connection with Carrier's new plant construction program.

H. T. Jarvis, formerly vice president and general manager, has been elected president and chairman of the board of directors of Refrigeration Engineering, Inc. In similar actions, **D. D. Wile**, formerly chief engineer, was named vice



H. T. Jarvis



D. D. Wile



E. V. Jarvis

president and a director and **E. V. Jarvis** was elected secretary-treasurer and a director. Under the new organization **H. T. Jarvis** will continue to handle sales and sales promotion; **Wile** remains in charge of research and engineering and **E. V. Jarvis** takes charge of manufacturing.

Edward L. Hart has joined Servel, Inc. as manager of civilian quality control. Hart, working under **Dr. R. S. Taylor**, director of quality control, will administer the civilian product phases of the company's greatly expanded quality control program. For the past 15 years Hart was with Philco Corp., of Philadelphia, serving successively as refrigeration service manager, training school supervisor, product designer, chief freezer engineer, and executive engineer of the government and industrial division.

Donald H. McCuaig has been appointed manager of application engineering for the entire Worthington air conditioning and refrigeration division. McCuaig joined Worthington in 1944 as application engineer of the air conditioning and refrigeration division. In 1952 he was named manager of the central station equipment section, air conditioning and refrigeration, which post he held until his present appointment.



Iron Fireman Mfg. Co. has announced the appointment of four men to its field sales force. **Bert L. Desmond** has been named district sales manager in the Detroit market area, **John E. Griffith** has been named district sales manager through the state of Virginia, **Richard W. Brenneke** has been appointed manager of the Portland, Ore., sales and service branch, and **Albert G. Piece** has been named a field engineer assisting dealers in sales throughout New England.

Walton A. Lean has been promoted to vice president and technical director of Wilcolator Co. In his new post Lean will be responsible for the coordination of sales, engineering and production. Lean joined Wilcolator in 1927 as a sales engineer. He collaborated in the development and application of the hydraulic type thermostat.



Raymond A. Stoesser has been appointed vice president, general manager of manufacturing of the Plumbing and Radiator Heating Div. of American Radiator &

3 steps to MOTOR CAPACITOR REPLACEMENT



PROFITS



Correct diagnosis... immediate service... stay-put job. Those three steps insure your PROFITS, first and last. Here's how...

- 1. Correct Diagnosis:** Select the correct universal or exact-duplicate replacement for any standard capacitor-type motor where identifiable. Otherwise, **Aerovox Capacitor Selector**, at the mere flip of switches, indicates required capacitance for best torque, minimum starting time, and safe voltage.
- 2. Immediate Service:** Getting that motor going without delay, even if permanent replacement capacitor is not at hand, is simple and sure with the **Aerovox Emergency Capacitor**. Temporarily clipped to motor. Plugs in the required capacitance.
- 3. Stay-Put Job:** At your convenience, get the correct **Aerovox replacement capacitor** from your Aerovox supplier. Install it—forget it!

GET THE FACTS . . . Ask your Aerovox distributor—or write us directly—for latest Aerovox Motor Capacitor Catalog.



AEROVOX CORPORATION
NEW BEDFORD, MASS.

HI-Q
Division
Olean, N.Y.

ACME
Electronics, Inc.
Monrovia, Calif.

CINEMA
Engineering Co.
Burbank, Calif.

In Canada: AEROVOX CANADA LTD., Hamilton, Ont. JOBBERS ADDRESS: 740 Belleville Ave., New Bedford, Mass.
Export: 41 E. 42nd St., New York 17, N.Y. • Cable: AEROCAP, N.Y.

Circle No. 25 on Reader Service Card



LOW OR LINE VOLTAGE

Year'round Thermostat

...has built-in
Heat-Off-Cool switch

- SEPARATE temperature settings for heating and cooling
- Use year around for on-off control of fan-coil or similar combination heating and cooling units
- Ratings to 1/4 hp
- Removable lever tips for adjustment with special key provided
- Low differential—approximately 2°
- Champagne gold finished cover in modern design



• This control has no equal ... you get more, for less!

ASK

for Bulletin
No. T-1
...complete data
including helpful
wiring diagrams.

Consult nearest Field Office or write:

BARBER-COLMAN COMPANY, ROCKFORD, ILLINOIS, U.S.A.
Dept. G, 1338 Rock Street • Field Offices in principal cities
Automatic Controls • Air Distribution Products • Industrial Instruments
Aircraft Controls • Small Motors • Overdoors and Operators • Molded
Products • Metal Cutting Tools • Machine Tools • Textile Machinery

OVER 50,000 UNITS

Successfully Treated
With



FLO, the modern chemical dehydrant has been used in all types and sizes of refrigerating units. Small hermetics, conventional commercial on storage and freezers, industrial applications on low and medium temperatures—to prevent moisture freezing at the expansion valve.

FLO is a carbonate containing no dissolved solids, caustics or acids. When introduced as recommended, no damaging effects can result in its use to prevent freeze-ups.

FLO is available too in the popular plastic one and four ounce dispensing bottles and in pint and gallon cans.

Now also available in the new
One-Shot Sealed Tube

- Each one-shot tube of **FLO** contains just the right amount to protect a system containing 2 lbs. of refrigerant. (Use proportionately less for systems having smaller charges).
- Carry the convenient 36 tube carton in your service car at all times for immediate, on-the-job service.
- Ask your supplier for **\$6.75** the 36 tube carton—only

Sold by Leading Wholesalers.

Send for Catalog C-54 covering the complete Allin line.



Allin

MANUFACTURING COMPANY

1153 W. Grand Ave.
Chicago 22, Illinois

Circle No. 26 on Reader Service Card

Standard Sanitary Corp. Prior to the appointment Stoesser was serving as general manager of manufacturing for the division. He is in charge of the production of plumbing fixtures, kitchen products and heating and air conditioning equipment in the division's 16 plants.

Under a new marketing lineup in which field activities of Remington Corp.'s district and regional managers are under the direction of an eastern and western field manager rather than a general sales manager, **A. M. Masiello** and **C. F. Zauner** have been named as the two new field managers. Masiello, as east-



A. M. Masiello



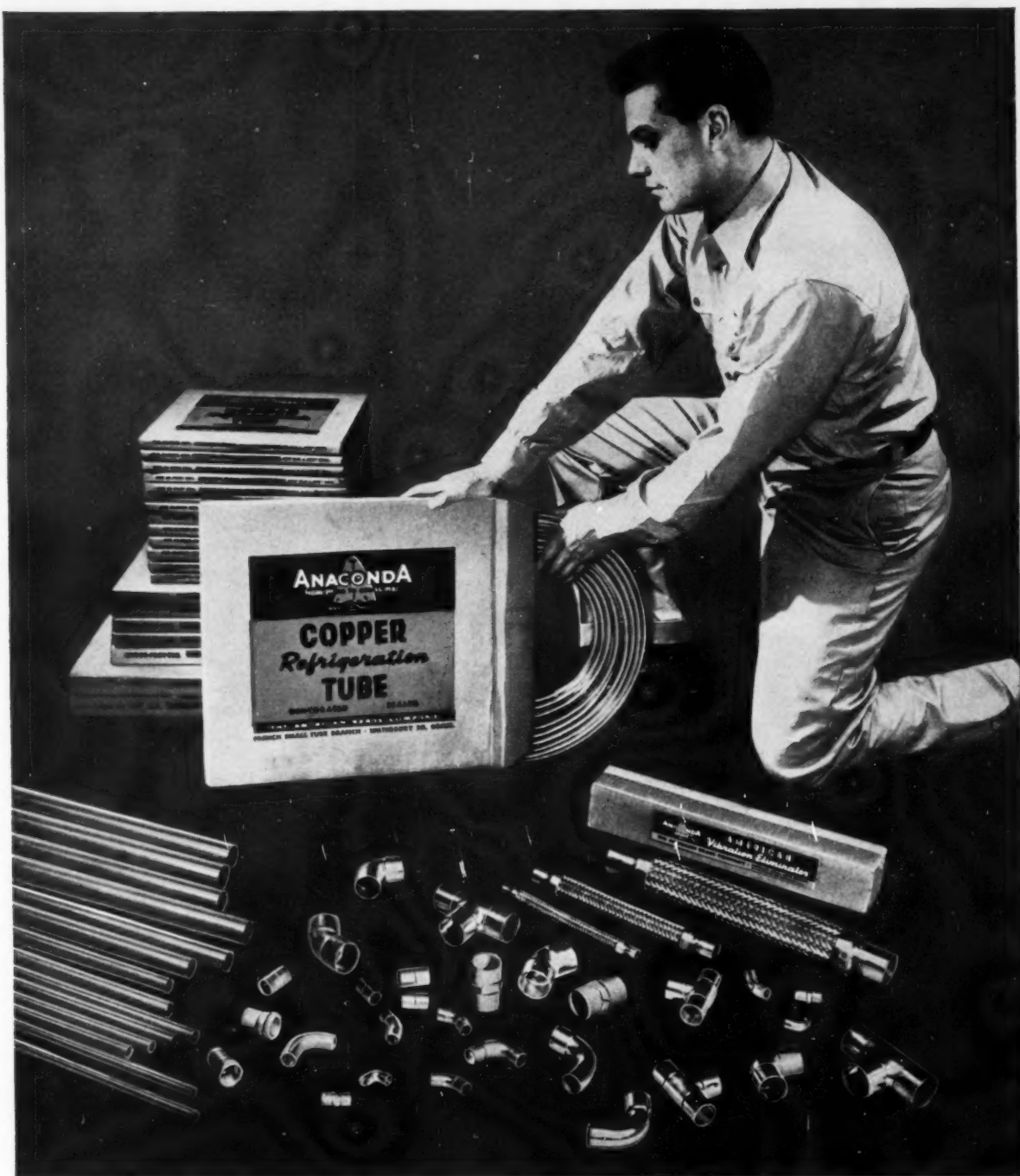
C. F. Zauner

ern field manager, will cover New York, Pennsylvania (except the Pittsburgh trading area), New Jersey, Delaware, Maryland, District of Columbia, Virginia, Tennessee, the Carolinas, Alabama, Georgia and Florida. Zauner, as western manager, will be responsible for the Pittsburgh trading area, Michigan, Ohio, Kentucky, Indiana, Illinois, Minnesota, Iowa, Eastern Nebraska, Missouri, Kansas, Arkansas, Oklahoma, Mississippi, Louisiana and Texas.

C. M. Weber, manager of the Careystone corrugated department, Philip Carey Mfg. Co., has been appointed manager of the Careduct department, replacing **W. D. Callan**, who has retired.

Perry E. Davis, formerly a divisional manager with Frigidaire Sales Corp., has been appointed sales manager of Unit Air Conditioners, Inc., the new franchised

BEFORE YOU START YOUR NEXT JOB...



... Ask your distributor for the whole ANACONDA line of refrigeration products

- Hard copper tubes in straight lengths and all sizes ... soft copper tubes in packaged coils ... copper tube fittings ... American Vibration Eliminators
- Made under strict quality control from start to finish

5421

THE AMERICAN BRASS COMPANY, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.
Circle No. 28 on Reader Service Card
and AIR CONDITIONING • JULY, 1954

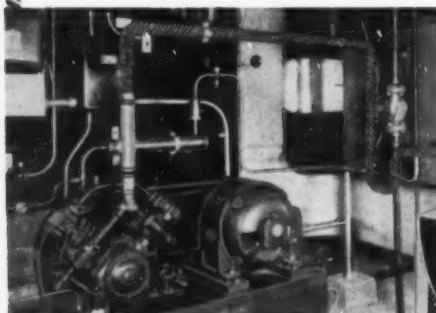
STOP Condensation Drip Rust and Corrosion

**WITH THIS PLIABLE,
CORK-FILLED,
MOISTURE-PROOF,
SELF-ADHERING
SEALER**



Cold water pipe or tubing condensation drip is messy, costly, often dangerous. Unheeded, the result is loss of valuable equipment, piping and connections rust and corrode, requiring frequent replacement, and hazardous conditions exist.

NoDrip Tape has been successfully used for years to *correct* and *control* this needless waste. Easily applied by winding spirally around pipes and tubing, NoDrip Tape becomes a *permanent* sealed jacket. No experience necessary, need no brads, fasteners, adhesives, etc. In addition, it holds temperatures more steady, reduces icing and frosting of lines. Equally effective on any pipe or tubing, iron, brass, copper or other alloy. Ideal for refrigerant lines in air conditioning systems, deep freezers, refrigerators, etc.



\$1.69 list a roll Higher west
of Rockies and Canada.
(Subject to usual trade discounts)

Write for **FREE** circular

JW Mortell
COMPANY

Technical Coatings for Home and Industry
SINCE 1893

553 Burch St., KANKAKEE, ILL.
Detroit, Mich. Lyndhurst, N.J.

Typical Coverage Per Roll

I.D. Iron Pipes: 10' of 1/2"
8' of 3/4"
6 1/2' of 1"

O.D. Copper Tubing: 13' of 1/2"
11' of 3/4"
9 1/2' of 1"
8 1/2' of 1 1/4"



Westinghouse distributor for northern Ohio, according to H. R. Weiner, president of the Cleveland concern. The company handles packaged units up to 15 hp. Davis is a registered professional engineer in Ohio and active in Cleveland ASRE affairs.

Jack Searls has been appointed assistant to the vice president-director of sales for Penn Controls, Inc. Searls was formerly general sales manager of Morrison Steel Products, Inc. Searls, with more than 15 years' experience in the field of control application, will make his headquarters at Penn's main plant and general office.



M. C. Terry and Leonard C. Bastian have been promoted to new positions in the Philco engineering department for air conditioning. Terry was named executive engineer for air conditioning. Bastian was appointed chief engineer for air conditioning.

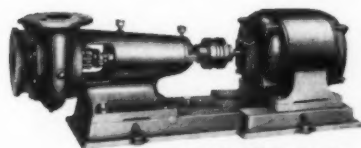
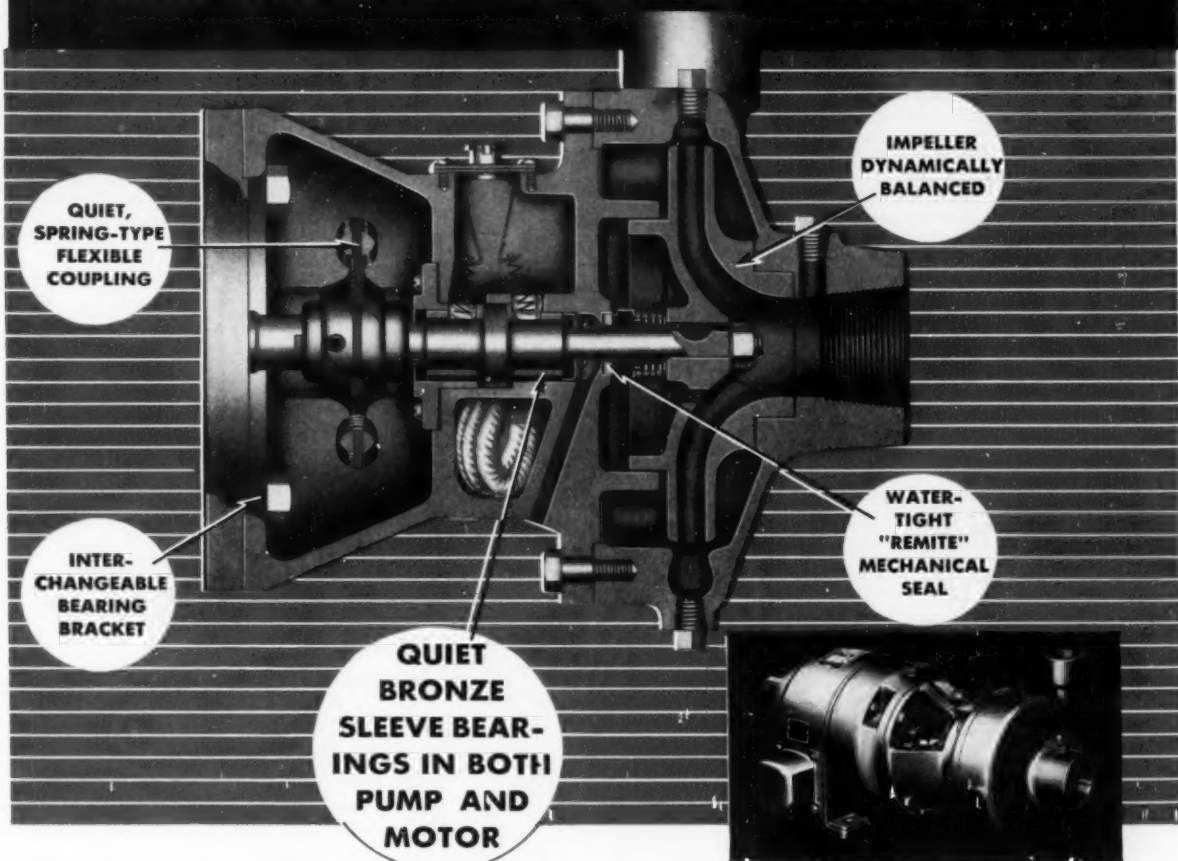
In a series of executive appointments, Peter B. Colwin has been named assistant to Chester S. Stackpole, general sales manager of Union Asbestos & Rubber Co.'s heating and cooling division, Emil T. Johnson has been named vice president in charge of production and engineering, and John H. Balch has been appointed executive vice president of the firm. Colwin will assist Stackpole in developing the company's newly-organized international sales organization. Before joining Unarco, Colwin was with the United Jewish Appeal as



P. B. Colwin

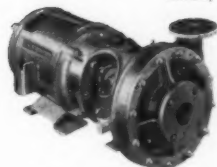
B & G 1522 PUMPS ARE **QUIETER**

THAN OTHER PUMPS USED FOR THE SAME PURPOSE



**B & G SERIES 1510-15
CENTRIFUGAL PUMPS**

Base mounted, flexible coupled units with enclosed or semi-open impellers. Capacities to 1200 GPM, heads to 320 ft.



**B & G SERIES 1531
UNI-BUILT
CENTRIFUGAL PUMPS**

Integral motor, enclosed impeller, "Remite" leak-proof seal. Capacities to 1200 GPM, heads to 400 ft.



THE TROUBLE-FREE PUMP FOR COOLING TOWER AND OTHER REFRIGERATION APPLICATIONS

Why be pestered with complaints about noisy pumps when it's so easy to avoid this common cause for dissatisfaction?

The B & G Series 1522 Pump is amazingly *quiet*, because both pump and motor are equipped with *long bronze sleeve bearings*...and because the flexible spring coupler successfully dampens noise!

In the 1522 you'll find a combination of features which assure dependable performance. The "Remite" Mechanical Seal, for example, ends leakage troubles. It's self-lubricating—*harder than glass*—wear-proof! The impeller is dynamically balanced for vibrationless operation—the bearing bracket assembly, including shaft and sleeve bearing, is interchangeable. Servicing is a simple matter—the 1522 separates into three parts.

With all these *plus* values, the B & G 1522 Pump is *competitively priced*! You can have it as an all-iron, bronze-fitted, all-bronze or stainless steel unit, with capacities to 150 GPM—heads to 115 feet.

Send for size and capacity data on B & G
Series 1522, 1531, 1510-15 Centrifugal Pumps

BELL & GOSSETT

C O M P A N Y

Dept. DM-45, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto, Canada

Circle No. 30 on Reader Service Card

director of the National Trades and Industry Div. Johnson, who joined Unarco in 1947 as head of engineering activities in the Fibrous Products Div., was formerly a partner in the Lawrenz Engineering Co. Joining Unarco in 1936 as auditor, Balch has been a member of the board of directors since 1938, when he was also elected secretary of the company.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

Robert S. Knowles has joined Trane Co. as a sales representative working out of the Richmond, Va. sales office. Knowles has been associated with the firm since 1946. He was formerly a sales department manager in the firm's main office.

Two personnel changes have been made by Dayton Rubber Co. in the company's realignment of the sales promotion, advertising and public relations departments. **J. D. Her-**

shey, former sales promotion manager of the mechanical sales division, has been appointed director of sales promotion and advertising, and **R. L. Wetzel**, formerly in charge of both advertising and public relations, will now devote full time to an expanded public relations program as director of public relations.

G. Edward Palmer, formerly general sales manager of Dulane, Inc., has been named central regional manager with headquarters in Chicago, and **Robert M. Bourgette**, former district manager of Deepfreeze, has been named western

There are more C-D motor-starting capacitors in use today than any other make.

THEY MUST BE BETTER! TRY THEM!

Free to recognized motor repairmen: C-D's famous motor capacitor manual and catalog. Write for your copy today. Dept. CR-74, Cornell-Dubilier Electric Corp., South Plainfield, N. J.



PLANTS IN SOUTH PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER AND CAMBRIDGE, MASS.; PROVIDENCE AND HOPE VALLEY, R. I.; INDIANAPOLIS, IND.; SANFORD AND FUGUAY SPRINGS, N. C.; AND SUBSIDIARY, THE RADIANT CORP., CLEVELAND, OHIO.



There are more C-D capacitors in use today than any other make



G. E. Palmer



R. M. Bourgette

regional manager for the Pak-A-Way food freezer division of Schaefer, Inc. Palmer will represent the company in the midwestern states and Bourgette's territory includes eleven western states.

Five appointments within the company have been announced by Peerless Electric Co. **Shannon C. Powers**, formerly assistant to Ralph Kroehle, president of the firm, has been named general manager; **William K. Terry** has been appointed manufacturing manager; **David G. Kroehle** has been named assistant manufacturing manager; **Cecil G. Young** has been named chief engineer; and **James A. Kutz** has been appointed sales manager of the motor division.

Del Moerick has been appointed vice president, sales, and **A. L. Topp** has been named vice president, engineering, by A-P Controls Corp. With A-P since 1937, Moerick has been general sales

Circle No. 31 on Reader Service Card

manager since 1953. Topp came to the firm in 1939 to head the refrigeration development laboratory and was named director of engineering over oil, gas and refrigeration



D. Moerick



A. L. Topp

in 1952. Moerick was formerly associated with L. J. Mueller Furnace Co. and Topp was with the refrigeration division of Yates-American, specializing in aviation air conditioning.

Edwin E. Hokin has been elected president and chief executive officer and Norman C. Naylor has been named chairman of the board for Union Asbestos & Rubber Co. Hokin has served as vice president in charge of the heating and cooling division which he organized during the past year. Naylor formerly served as president of the firm for four years.

H. H. Falkingham has been appointed manager of distribution development for General Electric Co.'s Air Conditioning Div. Falkingham will represent the G-E Div.'s Marketing Dept. in working with product departments, regional sales organizations, and distributors to strengthen and develop distribution. Falkingham joined G-E in 1952 as a distribution specialist for the company's Home Heating and Cooling Dept.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

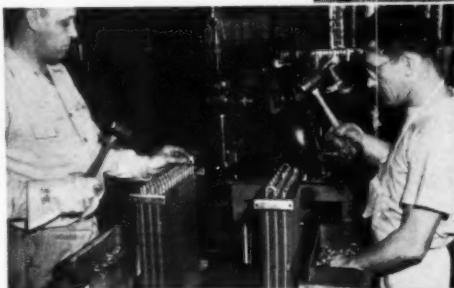
68 leak-proof joints in 2 $\frac{2}{3}$ minutes

**SIL-FOS
brazing
does it!**

This job goes to prove once more that you can't beat the brazing of non-ferrous metals with the low-temperature silver alloy SIL-FOS. And it also shows what a simple matter it is to get fast, economical production with SIL-FOS. Brazing return bends on the condenser and the evaporator of the FEDDERS room airconditioner is the job—and here's how it's done.

Photos and data courtesy of Fedders-Quigan Corp., Buffalo, N. Y.

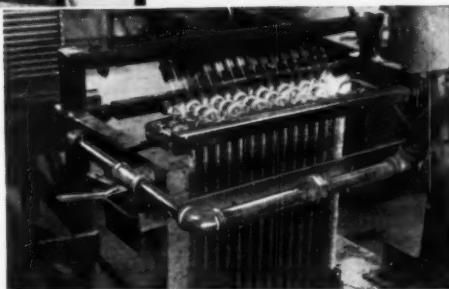
A SIL-FOS wire rings are placed on ends of return bends and positioned in the simple jig in lower left.



B Return bends with SIL-FOS rings in place are assembled on the tubes of the condenser.

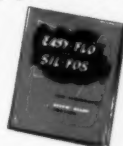
C The 3 rows of return bends are brazed at one time in this simple gas-air burner set-up—40 joints in less than 1 minute.

Return bends on the evaporator are done the same way—28 joints in 1 $\frac{1}{2}$ minutes.



BULLETIN 20 tells how to get fast brazing production

It gives complete facts about low-temperature SIL-FOS brazing and goes into detail about good joint design and fast production brazing methods. Write for a copy today.



HANDY & HARMAN

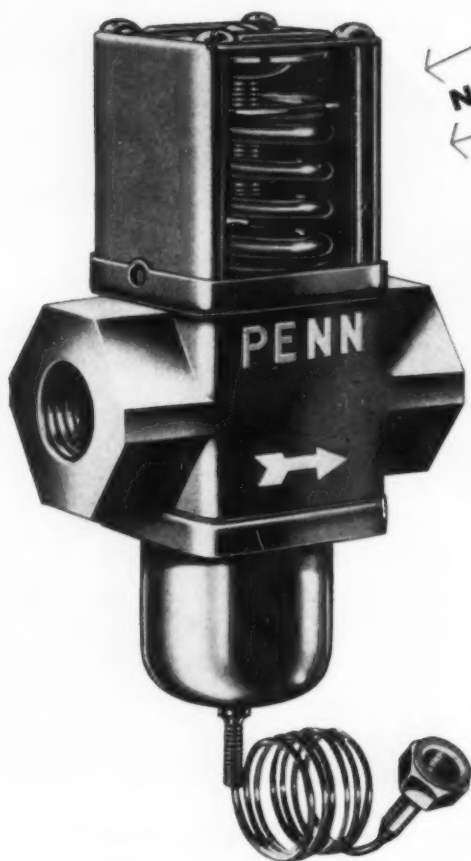
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DISTRIBUTORS IN PRINCIPAL CITIES

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OFFICES and PLANTS
BRIDGEPORT, CONN.
PROVIDENCE, R. I.
CHICAGO, ILL.
CLEVELAND, OHIO
DETROIT, MICH.
LOS ANGELES, CALIF.
TORONTO, CANADA
MONTREAL, CANADA

HERE'S WHY

PENN WATER VALVES stay on the job much longer



NO VALVE CHATTER

NO WATER HAMMER

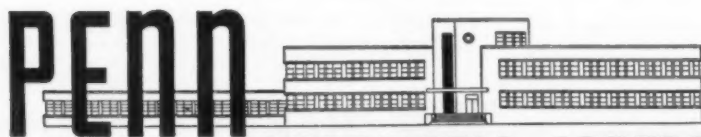
NO RUSTING OF RANGE SPRING

NO CORROSION OF SLIDING PARTS

EASY MANUAL FLUSHING

And the Penn water valve is very sensitive to changes in refrigerant head pressures to assure highest operating efficiency. Try the Series 246 on your next refrigeration job... you'll discover it will *stay on the job* much longer than other water valves.

Sizes from $\frac{3}{8}$ " to $2\frac{1}{2}$ " in flanged and threaded styles... also available for temperature actuated service. Ask your wholesaler or write **Penn Controls, Inc., Goshen, Indiana**. Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

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IBNU'S

TRENDS · OPINIONS · REPORTS

MECHANICAL REFRIGERATOR CARS are now ready to take their places as standard railway equipment, in the opinion of D. C. Minard, president of Trane Co. More than 350 such cars are already in service. The principal advantages of mechanical "reefers" over iced-car facilities are that the former can maintain any desired temperature condition uniformly through a densely packed load; need for pre-cooling is eliminated; changing weather conditions don't affect the load temperature; lower temperatures can be obtained mechanically than with ice and salt; and there's no corrosion damage caused by brine. Mechanical units can run 15,000 to 20,000 hours before a major overhaul is required.

THE MOTEL MARKET for air conditioning is one that is growing in importance. In 1948, for instance, there were 25,919 motels; by 1951 this number had almost doubled, totaling 43,356. As of 1953, the total was 50,576. Six hundred and fifty million lodgers used motels during 1953, as compared with 565 million in 1950. Motel operator's total income in 1953 was \$1.5 billion. Cost of building a motel today runs between \$5,000 and \$7,000 a unit.

REFRIGERATIVE PROCESSES are being used to an increasing degree in a number of new plants built recently for the recovery of petroleum liquids from natural gas. Until recently refrigeration has been applied to absorption plants only where it was desired to increase the recovery in an existing installation. Now, however, refrigeration is being incorporated in the original design of some new plants. These plants refrigerate the wet high pressure gas and lean absorption oil to about 60 F, and claim about 80% propane recovery. A striking feature of one plant is the use of a very light absorption oil which, in conjunction with the low absorption temperature, makes possible a 50% reduction in the oil circulation required.

A BUILT-IN DISPLAY CASE has helped to boom sales of specialty long-profit baked goods for a New York City bakery firm. The low temperature case, incorporated right into the front of the bakery's display window, is framed in stainless steel and is about a foot above the sidewalk level, on a terrazzo platform, with the glass front sloping at a 15 degree angle for better visibility by passers-by. Sales have more than doubled since the case was put into service, and much of the new business is from passing traffic (including motorists) attracted by the display.

MINDS WORK BETTER in cooler atmosphere, and a new heating control system developed for schools allows the principal to read the temperature in any room by merely pressing a button on a monitoring panel in his office. Also, the control system includes a fire-detecting element and relay which sounds an alarm and indicates on the master control panel the exact location of a blaze anywhere in the building. Main purpose of the system is to permit principal and teachers to work together in using properly controlled temperatures as an aid to learning. Extra mental effort causes the body to build up internal heat, which dulls pupils' mental processes and slows his learning efficiency unless room temperature is lowered to compensate for this.

COLOR STYLING OF CONTROLS, a trend started last year by Minneapolis-Honeywell Regulator Co. in its home thermostats has now been extended by that firm to cover its entire line of home and commercial heating and cooling control devices. In the future, M-H will use a gray finish on all damper motors, relays, furnace controls, oil burner regulators, and other devices formerly supplied only with black covers. This color change, recommended by industrial designer Henry Dreyfuss, is intended not only to give the new line a new brightness and fresh "feel", but also to serve the functional purpose of increasing the visibility of controls and panels, thereby increasing efficiency and ease of operation.



THIS MAN, THIS TRUCK, AND THIS GARAGE form the heart of a refrigeration and air conditioning contracting business which grosses more than \$50,000 a year. Thus Chuck Denton, of Saginaw, Mich., proves conclusively that . . .

You Don't Have To Be Big To Sell Big!

HOW is it possible to do a \$50,000 to \$60,000 annual volume in commercial refrigeration and air conditioning work in a town of less than 100,000 population — without a showroom, without an engineering department, and with a minimum of shop facilities?

Chuck Denton has the answer: "Work hand-in-glove with a cooperative and well-equipped wholesaler."

Chuck and his brother, Tom, operate a refrigeration and air conditioning service and contracting business in Saginaw, Mich., under the name of C. W. Denton. The wholesaler whose helping hand has made possible the continuing success of their organization is J. George Fischer & Sons, Inc.

Basically, Chuck Denton's story is no different than that of many another enterprising individual who has started out by working as a service mechanic for some estab-

lished firm, gradually developed his abilities and increased his experience until he felt capable of striking out for himself, and then struggled to build his own business on the solid foundation of good workmanship and fair dealing.

But the Denton story does highlight the fact that—given the proper circumstances — a contractor of this type can develop his own firm into big business without a big outlay of capital or an impressive "front" of physical facilities.

Chuck Denton's office is his comfortable but modest home. His shop is largely on wheels in the form of a well equipped panel truck. For storage space and some additional shop facilities he uses the standard two-car garage which stands at the rear of his yard.

Brother Tom operates a similarly equipped truck, and maintains a small shop in the basement of his

home. The firm subscribes to a telephone answering service which handles all incoming calls when both men are out on the job.

For anything beyond these limited facilities, the Dentons rely upon the Fischer organization.

A prospect wants to see a particular piece of equipment before he buys it? Then one of the Dentons takes him over to the Fischer display floor.

The brothers need some engineering assistance on a particularly large or involved installation? Fischer's has a man whose job it is to supply this kind of help.

Some deal on which the Dentons are working is unusually tough to sell? Then Fischer's will send along one of their own sales engineers to help get the name on the dotted line.

Some important prospect is hesitant about letting a major contract

to any firm as small in size and as unimpressive in outward appearance as the Denton organization? Then Fischer's will throw the weight of their reputation and financial rating behind the deal by guaranteeing in effect that the Dentons will install a satisfactory job.

All of this is not to imply that the Dentons are not capable craftsmen in their own right. Obviously the Fischer organization would not be willing to back them, or any other customer, to this extent unless through experience they had gained complete confidence in that customer's capabilities and integrity.

Won't "Go Overboard"

But it does explain how the Dentons have been able to resist the temptation to "go overboard" by taking on a franchised line of equipment and splurging on elaborate showroom and shop facilities, with the consequent heavy overhead and increased responsibilities.

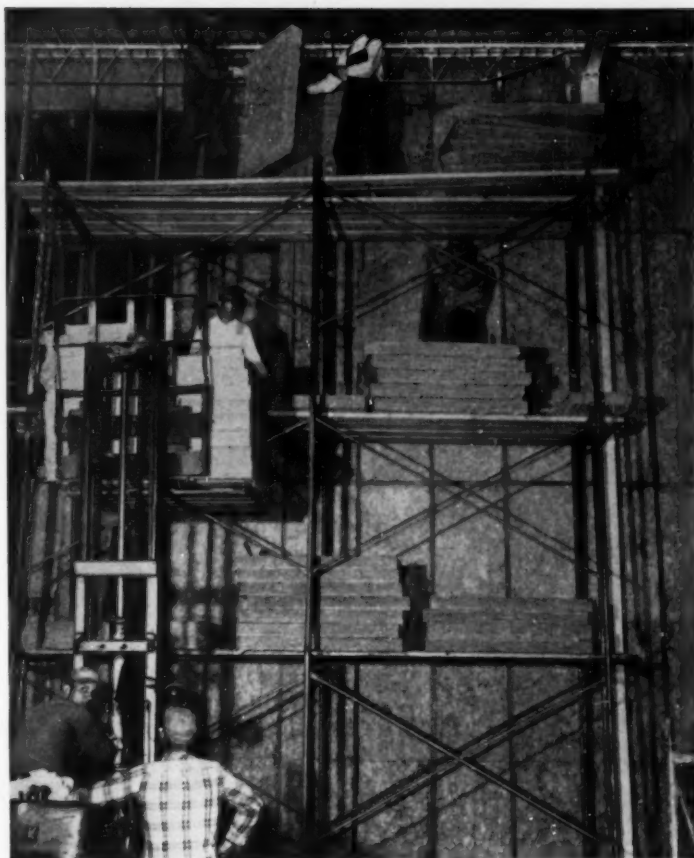
Here's the way Chuck Denton sees it:

"The way we're operating now we have just about all the business we can handle. If we expand beyond our present position it will mean a considerably greater investment on our part, without any assurance of sufficient additional financial returns to justify this investment.

Burdens Top Opportunities

"More than once we've been offered attractive franchise opportunities, but each one carried with it the obligation of considerable material expansion on our part. We've seen too many other operators in a similar position make this move and find themselves unable to sustain the added burdens of overhead and managerial problems.

"We prefer to stay as we are, in a position where we have complete control over every phase of our operations, and can take on all the business which we ourselves can handle without getting over our heads financially or any other way. We can sell at our own prices, maintain the kind of margin we feel is necessary to successful operation, and provide the kind of service that we know from experience will keep our customers coming back for more."



WORKMEN APPLY INSULATION to a wall of Pasco Packing Co.'s huge new freezer warehouse in Dade City, Fla. Two 4" layers of Fiberglas were applied to the walls. Roof insulation is 9" thick and floor insulation is 8" thick. Temperatures of -15 F will be maintained throughout the warehouse.

Warehouse Is "Wrapped in Glass"

WHAT is believed to be the largest freezer warehouse in the nation, with a capacity of 2½ million base cases (5,625,000 gallons) or 833 refrigerator car loads of frozen concentrate, has been completed by Pasco Packing Co., Dade City, Fla. The new warehouse provides 2½ million cu. ft. of space which holds about one-half of the company's production of frozen concentrate, packaged and ready to ship.

The warehouse is literally "wrapped in glass". More than 90 railway carloads (or nearly 2½ million board feet) of "Fiberglas" low temperature and roof insulation was used in construction of the building. Insulation thicknesses are 9" in roof areas, 8" in walls, and 8" beneath the floor to assist in maintaining temperatures of -15 F.

The warehouse includes 100,000 square feet of floor space divided into four equally sized rooms and an equipment area.

The building is of concrete block and brick construction with a steel roof deck. Fiberglas insulation forms a complete envelope inside the structural parts.

Frick ammonia compressors and allied equipment are used for refrigeration. The evaporators in each of the four freezer rooms are

Continued on page 58



1 Double-decked load of cases is moved off truck onto hoist.



2 Hydraulic hoist is lowered to level of warehouse floor.

3 Cases are moved into storage by means of 4-wheel dollies.

GIVE YOUR BUSINESS A LIFT...



IS your place of business, like that of many refrigeration dealers and contractors, a one-level, ground-floor operation, without a loading dock? Then here's a materials handling suggestion that may save you time and money, as well as safeguard the physical welfare of your employees.

Taylor Refrigerator Co. of Des Moines, Iowa, had been faced with just this problem in its old headquarters. So when it moved into its new building, which was constructed along the same lines, S. G. Taylor, who heads this organization, was determined to do something about it.

After considerable deliberation and investigation, the solution arrived at was the installation of a hydraulic hoist which was located in a pit in the building's driveway, just outside the entrance to the warehouse area. With this lift, Taylor reports, his organization now enjoys all the benefits of dock-height handling.

Location of the hoist outside the building entrance was an extremely wise decision, Taylor points out, inasmuch as many of the truckloads of equipment which are delivered are too high to pass through the door.

Often, when handling carloads of equipment that are double-decked in the freight car, this equipment is run right onto the truck bed, still in double-deck fashion. It is left that way during the haul to the Taylor warehouse. Then, through use of the hydraulic hoist, it is possible to lift down the upper piece of equipment by means of lever dollies and rollers.

Size of the plate on top of the hoist is 6 x 8'. This permits the average 10' case to straddle the hoist and bear its weight on 4-wheel dollies placed under each end as the hoist is lowered from beneath it. On these dollies the case can then be easily pushed anywhere in the warehouse.

Continued on page 56



... REVERE

DRYSEAL

COPPER REFRIGERATION TUBE

It's a dead cinch to bend dead-soft DRYSEAL. Your hands are all you need, even for the most intricate bends. And its ductility and special temper make it extremely easy to flare for compression fittings without danger of splitting.

And to make sure you get a tube that is free of even the slightest trace of dirt or moisture we double crimp DRYSEAL on both ends, at the factory. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. That's why the inside of DRYSEAL shines like a new penny. This double crimping does not interfere with installation for it is made in such a way that the diameter of the tube does not change, permitting DRYSEAL to be passed through any opening large enough for the tube itself. Economical tube sizes range from $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D.

In addition the DRYSEAL carton, has been attractively designed for easy identification in stock. It contains one 50-foot coil of DRYSEAL... is easier to handle, light weight, economical and is sturdily made to assure protection of the tube.

YOU CAN BEND DRYSEAL WITH
YOUR FINGERS.



IN THE EASY-TO-HANDLE
NIFTY-FIFTY...ONE COIL CARTON

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.

SEE "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS

KEEP TAB ON YOUR BUSINESS

— Day by Day

Do you know exactly how you stand at the end of each day in regard to these important factors of your business?

- ✓ Volume of invoices handled
- ✓ Cash position and bank balance
- ✓ Ratio of receivables to payables

THE DAILY MANAGEMENT REPORT • • •

DAILY MANAGEMENT REPORT			M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> TH <input type="checkbox"/> F <input type="checkbox"/> S <input type="checkbox"/>		
PURCHASES			INVOICES		
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TOTAL THIS MONTH			TOTAL THIS MONTH		

THE Daily Management Report was devised to meet our need of having statistical information on hand on a daily basis. The volume of invoices going out certainly reflects how heavy the heart of our business is pounding.

Also, it is imperative for an organization of our size to keep close control of the daily cash position so as not to permit our bank balance to go below the minimum consistent with company policy. In addition, a cursory glance at the size of receivables and payables is helpful in determining whether the current ratio is improving or not.

This report, which we have now used for over a year, has been our most useful and successful tool in controlling operations. It is processed through the various departments and in its finished form is initiated daily by the president, vice president and controller of the firm.

Above all, the very fact that this report is required necessitates each department being completely up to date. This in itself repays the effort involved a hundredfold.

MORE TIME FOR SALES

is needed by top executives of every commercial refrigeration dealership. F. D. Stella Products Co., Detroit, Mich., has helped free its key personnel from the shackles of office routine by streamlining its paper work through the application of an integrated series of "custom tailored" business forms. Here's another step in the process.

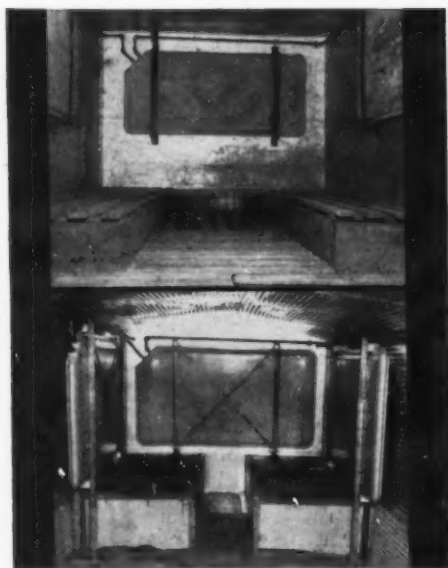
"our most useful tool in controlling operations"

195										THE F. D. STELLA PRODUCTS CO.									
										4011 Fenkell									
										Detroit 21, Mich.									
P A Y M E N T S					R E C E I P T S					S H I P M E N T S R E C ' D									
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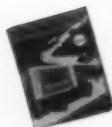
HILLCREST DAIRY milk trucks are fully loaded and ready to go when the driver arrives in the morning. Milk products loaded the previous day are kept cold and fresh all night long by the Kold-Hold "Hold-Over" Plates and mounted compressor in this Boyertown refrigerated body.

LILLY ICE CREAM COMPANY keeps 1900 gallons of ice cream cold and hard using a KOLD-TRUX "Mobilmatic" unit and 8 Kold-Hold "Hold-Over" Plates. Body by American Body and Trailer Co.



R. L. ZEIGLER, INC. saves \$6,000 a year in dry ice costs using Kold-Hold "Hold-Over" Plates and Make-and-Break Connections in refrigerating 15 sausage delivery trucks. The plates provide refrigeration "at practically no expense."

FROZEN FOOD SALES CO. keeps 2 ton loads of frozen foods at below freezing temperatures in this truck for 36 hours with 5 Kold-Hold "Hold-Over" Plates. The plates are periodically "charged" through Ammonia drop lines.



6 WAYS TO REFRIGERATE A TRUCK

are described in Bulletin KT-453. Send now for your copy.

4 good reasons why **KOLD-HOLD**[®] is the **HEADQUARTERS** for **TRUCK REFRIGERATION**

The four highly-successful refrigerated trucks shown on this page illustrate the cost-cutting performance so common in Kold-Hold installations. Each is tailored to the individual needs of the user from the six different Kold-Hold methods of truck refrigeration.

Because of this ability to provide the exact type of truck refrigeration for every application, users and body builders alike often refer to Kold-Hold as the "HEADQUARTERS for truck refrigeration." They know that a Kold-Hold installation can be depended on to provide a satisfactory and economical refrigeration that pays for itself many times over.

Be sure to specify Kold-Hold refrigeration the next time you refrigerate a truck.

Look to Kold-Hold for the latest developments in truck refrigeration

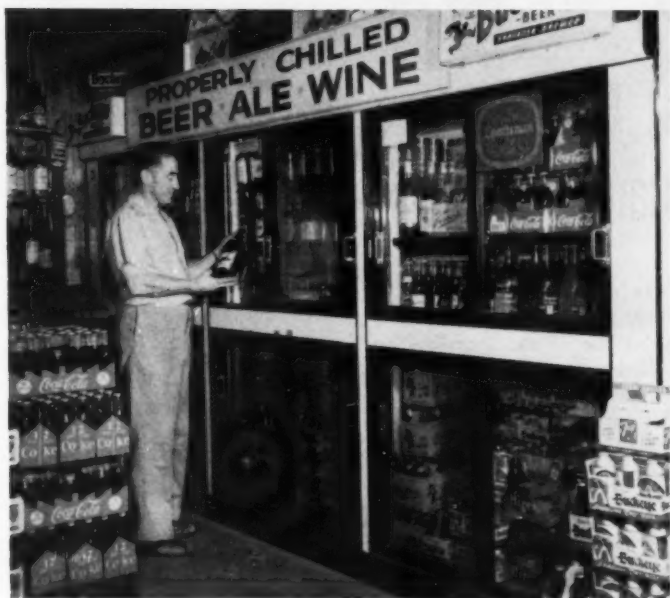
KOLD-HOLD division

TRANTRER MANUFACTURING, inc., 503 E. Hazel St., Lansing 4, Michigan

Circle No. 35 on Reader Service Card

JULY, 1954 • **COMMERCIAL REFRIGERATION**

"BETTER FOR BEER" is the way the proprietors of beverage carry-out stores describe the used dairy cases which Bernard J. Perry of Koch Toledo Co. sells to them for chilling their beer and wine stocks. At right, Perry looks over one of these used cases on his display floor before selling it as a bottled beverage cooler.



Here's a new use
for old dairy cases

"All the Cold Beer You Want!"

ALL the cold beer you want!" That's the secret of success in the beer and wine carry-out business, and Bernard J. Perry, owner of Koch Toledo Co., commercial refrigeration dealership in Toledo, Ohio, has found a profitable way of supplying the equipment to do the job.

The best thing about Perry's system is that it builds business and increases profits not only for the operators of the bottled beverage shops, but also for Perry himself.

Perry's system is simple. He buys discarded wall-type dairy cases from supermarkets which are converting completely to open-type equipment, reconditions them if necessary, then resells them as bottled beer and wine coolers to the owners of the carry-out establishments.

Perry first latched onto this idea when he learned that all of the local

outlets of a national grocery chain were being changed over to 100% open-style self-service cases. The thought of all those wall-type dairy cases being thrown on the used equipment market intrigued him.

To what good use could these cases be put? The answer struck him immediately when one of his old customers who had just opened a new beverage carry-out store came to him seeking a solution to his refrigeration problem.

He needed ample refrigerated space in which to stock a variety of brands of beer and wine for immediate consumption. Yet his store, like most other retail outlets of this type, was a one-man operation.

A walk-in cooler simply wouldn't fit his needs, he explained, because he would have to leave the sales area unattended whenever he entered it. In fact, he cited the case of

one proprietor he knew who had been locked in his walk-in cooler by a thief who proceeded to loot the store at his leisure.

When Perry suggested the use of one of the used dairy cases, the idea seemed like a natural. It worked out so well that this customer now says: "Honestly, these cases are so well suited for our particular needs that I don't know why the manufacturer ever sold them for dairy cases in the first place!" Cost-wise, too, this idea makes good sense, because so many stores of this type are started on the proverbial shoestring.

Perry has found that these cases, still in very serviceable condition, do not need refinishing. And the store owners have discovered that the beer and wine salesmen engage in spirited competition to see whose signs will be used to cover the

Continued on page 56

COMMERCIAL *Refrigerator* SALES NEWS

Fountain Freezers Forecast End To Dipping, Restaurateur Says

ALL ice cream portions ultimately will be dispensed by automatic ice cream freezer equipment, instead of by the laborious hand-dipping method, in the opinion of Walter Jensen, leading Vancouver, B.C., restaurant operator.

Although Jensen, hard-hitting general manager of a chain of nine restaurants and drive-ins, voiced this theory before a meeting of Sweden Freezer Mfg. Co. area sales managers, he told only of his own experiences and labeled his opinions of the future methods of dispensing ice cream as his own.

"Dipping by hand is as obsolete as the horse and buggy," Jensen said. "It wastes time and labor and slows up service, especially in the making of milk shakes. A shake completed in a few seconds means a saving of around two minutes over the hand-dipping method—and that means money in my pocket through lower food costs and less fountain help. Since I am paying one of the highest wage scales in Western Canada, automatic fountain equipment became a necessity to me in order to cut labor costs.

"I serve an average of a total of 25,000 people a day in my places", said Jensen, "and saving a few minutes of time preparing and serving each fountain dish is important in maintaining a high stool turnover. It is really amazing how much this automatic equipment has speeded up service in our operations."

Jensen uses the soft-served product in seven of his nine establishments and is planning on converting his other two to automatic fountain equipment in the next several

months. He pointed out that customer preference was an important factor in his use of the automatic fountain freezer equipment.

"They like the soft-served product, and its use has increased our pie a la mode business materially for example", he said. "A freezer in full view of the customer where



he can see it in operation, is an important element in merchandising fountain dishes."

Reduction of ice cream food costs by using the automatic fountain system was stressed by Jensen who said installation of such machines lowered his ice cream costs to 25.4% and milk shake costs to 21.9%.

"This means", said Jensen, "that where my ice cream fountain dishes formerly had a food cost of up to 65%, with the average around 45%, the food cost for the same dishes is now 35%. It would be much lower than this except that the cost of the other ingredients such as toppings, whipped cream, nuts, and cherries is high".

NCRSA MEMBERS REPORT 15% RISE IN SALES

Average dollar sales increase of commercial refrigeration dealers reporting to the National Commercial Refrigerator Sales Association for the first quarter of 1954 was 15.05% over the same period of 1953, the association reveals.

Dollar new profit before taxes, the report shows, showed an identical rise of 15.05% over the first quarter of 1953. Inventory as of March 31, 1954, was up 13.77% over the previous year, while accounts receivable showed a 17.05% increase as of that same date.

More dealers than ever before participated in this regular quarterly survey, according a bulletin issued by the association.

VICTOR NAMES BURNS PHILADELPHIA OUTLET

Judson C. Burns, Inc., Philadelphia, Pa. has been named distributor for Victor Products Corp.'s line of room air conditioners, dehumidifiers, and chest and upright style freezers.

Burns, Inc. has been selling Victor commercial refrigeration equipment for the last 30 years under the supervision of Dave Young. Samuel Glass is president of the firm and C. G. Goodmansson is general sales manager.

SALESMAN GRADING PLAN OUTLINED BY NCRSA

A plan for comparing salesmen, which is being used by a distributor in another field, has been called to the attention of members of National Commercial Refrigerator Sales Association through the group's official bulletin.

Under this plan, salesmen are graded with the following criteria as guides:

1. Hours reported;
2. Calls made;
3. Coverage of territory;
4. Sales increase;
5. Accounts increased;
6. Accounts decreased;
7. New accounts;
8. Net profit;
9. Accounts lost;
10. Total sales;
11. Gross percent on sales;
12. Net percent on sales;
13. Quota;
14. Attitude.

The company using this plan indicates that it expects to promote



Chase Copper Refrigerator Service Tube ($\frac{1}{4}$ " to $\frac{3}{4}$ " diameter) comes in this handy new package . . . makes it easy to use, store, identify and ship.

...Because It's CHASE COPPER REFRIGERATOR SERVICE TUBE

You, too, will prefer Chase Copper Refrigerator Service Tube—from the first time you use it! You'll find it easy to work because it's soft . . . easy to bend because of its uniform temper. Controlled annealing means tube that is clean, bright, oxide-free.

The new Chase end seal keeps it clean and dry inside. Made in $\frac{1}{8}$ " to $\frac{3}{4}$ " diameters and standard 50' lengths.

Chase BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

• The Nation's Headquarters for Brass & Copper

Albany†	Cleveland	Kansas City, Mo.	New York	San Francisco
Atlanta	Dallas	Los Angeles	Philadelphia	Seattle
Baltimore	Denver†	Milwaukee	Pittsburgh	Waterbury
Boston	Detroit	Minneapolis	Providence	(sales office only)
Chicago	Houston	Newark	Rochester†	
Cincinnati	Indianapolis	New Orleans	St. Louis	

Circle No. 36 on Reader Service Card

and AIR CONDITIONING • JULY, 1954

sales, encourage the sale of profitable product groups, up-grade salesmen by the intelligent distribution of any additional compensation, and attain related benefits.

JORDON NAMES GRANT CALIFORNIA AGENT

U. S. Grant and Associates, Los Angeles, Calif., have been appointed representative of Jordon Sales Co. Their territory will include California, Arizona and Nevada.

SERVICE RECORD HELPS CLOSE SALE FOR DEALER

Eighteen reach-in refrigerators, seven automatic ice cube makers and four refrigeration compressors recently were sold to a 300-bed St. Cloud, Minn. hospital by the local Frigidaire dealer, Bob Pflepsen.

One of the big reasons the hospital administrator selected this equipment, despite lower competitive bids, was because of the dealer's excellent service reputation. The economy savings story was also a big factor in closing the order.

COMPLETELY NEW

"Pebblestone" BEVERAGE COOLERS by * KOLD-DRAFT

NEWLY DESIGNED
COMPLETELY MODERN
A NEW HIGH IN EFFICIENCY



* Trademark
Reg. U.S. Pat. Off.
Copyright, 1954
Uniflow Mfg. Co.

Shown:

MODEL PT-27

FAR IN ADVANCE
OF COMPETITION

FEATURING:

- 1—A new low price
- 2—Beautiful and efficient SLOPING FRONT DESIGN
- 3—Truly a SPACE MISER—extremely large capacity in a small space
- 4—New "easy pickup" method of longitudinal NECK-TO-NECK bottle stacking
- 5—Models available—13 - 27 - 40 - 54 case capacity, remote or self contained

Write Today For Literature
And Prices

A product of the

UNIFLOW MANUFACTURING CO.

EAST LAKE ROAD, ERIE, PA.

BUILDING YOUR BEST VALUE IN BEVERAGE COOLERS SINCE 1932

Circle No. 37 on Reader Service Card

The equivalent of twelve horsepower of refrigeration now replaces the 90 horsepower steam engine, compressors, and circulating pump formerly used to cool the walk-in refrigerators and reach-in equipment.

H. J. Schneider, hospital engineer, says, "Already we are saving the equivalent of half a ton of coal a day as a result of the change-over to the new equipment." The savings would even be greater during the summer because the coal-fed furnace can now be turned off during the summer, as it is not needed to create power for the refrigeration equipment.

The new reach-in refrigerators placed on all floors of the hospital, as well as five in the kitchen, give better refrigeration of foods and medical supplies.

The new ice cube makers were placed on each of the patients' floors and have shown a large saving over the former ice plant that was located in the basement of the hospital. Actually, half the ice made in the bulk plant was melted before it ever got into the patient's room, which was a tremendous loss both in ice and money.

BEVCO UPS PRODUCTION OF COMBINATION COOLER

Bevco Co. has enlarged production of its beverage cooler with the cold drinking water combination.

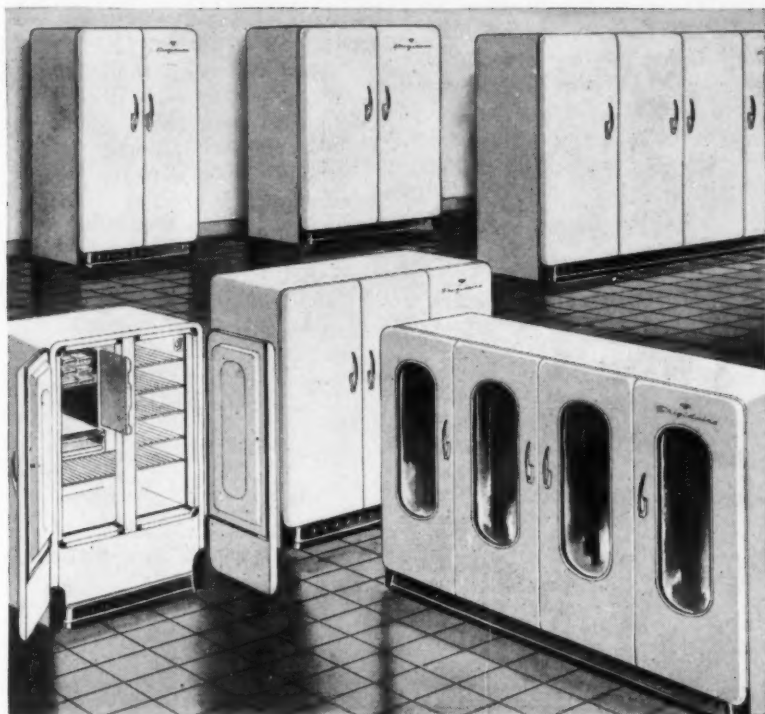
This cooler which is especially applicable to use in restaurants, cafeterias, etc., has found additional application in offices. The combined dry bottle storage area and cold drinking water facility helps to keep office workers from making extra trips "outside" for refreshments.

NAMES CANADIAN OUTLET

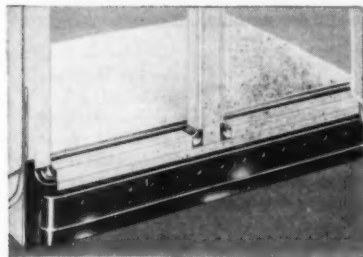
REMA Refrigeration Mart, Ltd., Montreal, Quebec has been added to La Crosse Cooler Co.'s field sales force. The firm will represent La Crosse throughout the Maritime Provinces and will work closely with La Crosse dealers in that area.

BUY FROM YOUR
REFRIGERATION WHOLESALE

ANOTHER IMPORTANT DEVELOPMENT IN FRIGIDAIRE'S PACKAGED PRODUCT EXPANSION

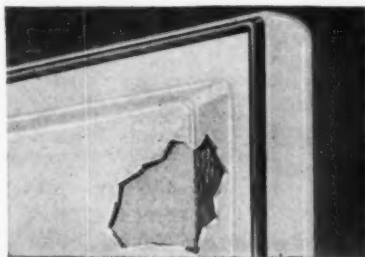


Unmatched for selling features...the complete line of Frigidaire Reach-Ins consists of eight models. Two 17 cu. ft. models offer a choice of cooling units, "Flowing Cold" system, and Super-Freezer Ice Making Cooling Unit that provides space for 56 lbs. of frozen food and 6 Quickcube Ice



All-steel cabinet—porcelain interiors...two features that give Frigidaire Dealers a real sales story. Interiors and exteriors are beautifully styled—an important plus in many commercial installations.

Trays, 27, 44 and 62 cu. ft. models with "Flowing Cold" offer maximum storage space in a minimum of floor space. Glass-door models in 27, 44 and 62 cu. ft. capacities, complete the line. All models have Lifetime Porcelain interiors and acid-resisting porcelain floors.



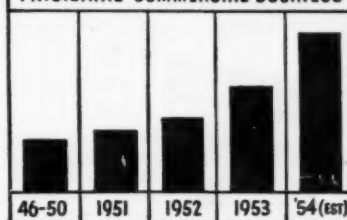
Heavy, 3" blanket of fibrous glass wool insulation throughout cabinet and doors protects food within. Blue rubber door seal on inside edge of all doors provides snug, sure fit...locks cold in.

Outstanding Reach-In models are part of long-term plan to give Frigidaire Commercial Dealers greater sales opportunities

Frigidaire's complete line of beautiful, feature packed Reach-In Refrigerators is typical of the packaged product lines behind which Frigidaire is throwing the combined weight of engineering know-how, expanded production facilities and stepped-up promotion. This all adds up to more effective selling, because dealers can now concentrate their efforts on established lines of packaged products with definite sales-winning features.

Placing major emphasis on packaged products has already paid off in more sales for Frigidaire Commercial Dealers as shown by the chart. It will continue to pay off, too, in more and better lines of products, in added selling features, in heightened efficiency and product dependability—as well as in easier instal-

**POSTWAR GROWTH OF
FRIGIDAIRE COMMERCIAL BUSINESS**



lation and simplified servicing. And many more important developments are being planned on Frigidaire drawing boards today, designed for the specific purpose of adding greater depth and greater selection to these packaged lines.

Frigidaire Meter-Miser gives exclusive selling advantage

The heart of the Reach-In, and of practically every other Frigidaire packaged product, is its Meter-Miser mechanism—warranted 5 years.

Customers and prospects recognize the advantages of the Meter-Misers used in reach-ins, water coolers, ice cube makers, and millions of household refrigerators, and the XD Meter-Misers for remote operations. These famous compressors give dealers an exclusive story of economy and dependability that often clinches the sale.



FRIGIDAIRE

COMMERCIAL REFRIGERATION AND AIR CONDITIONING
—for growth and progress with General Motors

Circle No. 38 on Reader Service Card

and AIR CONDITIONING • JULY, 1954

PENN CONTROLS HOLDS TWO REGIONAL MEETINGS

Two brief sales conferences were held recently for field men by Penn Controls, Inc. at which new products and product information, new market developments in residential air conditioning, gas and oil heating, commercial refrigeration and other subjects were discussed.

The first conference, the mid-continent regional meeting, was held in Goshen, Ind., and the second conference, the eastern regional meeting, was held in New York City.

AIRPLANE COOLER SERVES AUTO SPEEDWAY HOSPITAL

For the first time in the history of the Indianapolis Speedway Memorial race classic, the track's hospital and first aid tent enjoyed air conditioning on race day.

Of the spectators, estimated at 150,000 to 200,000, between 2,000 and 3,000 seek relief from heat exhaustion, fainting spells, heart attacks and numerous minor afflictions during the long race day.

This year Chrysler Airtemp provided a truck-mounted mobile air

conditioner that directed 2,500 (cfm) of cool, dry air to patients within the track medical facilities.

The unit delivers 40 tons of refrigeration and is similar to those Airtemp units designed to air condition commercial and military aircraft at terminals between flights.

REMINGTON NAMES FOUR ROOM COOLER OUTLETS

Four new distributors for window and console type room air conditioners have been appointed by Remington Corp., Auburn, N. Y.

Standard Distributing Co. will handle the Remington line in the 67 counties of the San Antonio, Texas trading area. For the southeastern Pennsylvania, southern New Jersey and Delaware area, Remington has named Olson & Co. of Philadelphia as its distributor.

Tower-Binford, of Richmond will handle the room coolers in Richmond and Norfolk, Va., and Electric Supply Co., Wichita, will operate in south central and eastern Kansas.

READY FOR THE TEST?

You're ready for *any* test if you have these Marsh "Serviceman" instruments. They all share in those commendable Marsh family traits — precision, ruggedness, honest quality, remarkable *value*. Notice the new models . . . and the new "Serviceman" Timer! Remember:

Your jobber stocks them

Serviceman

TESTING THERMOMETER



Handsome new model of standard, distant-reading testing thermometer. Tests to 40 below. Tube is now made permanently leak tight by Marsh "Conoweld" process. Recalibrator now in back of case for easy access.

Serviceman

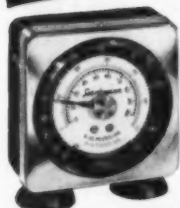
TESTING GAUGE SET



Great team of extremely accurate testing gauges in handsome polished brass cases with beveled glass crystals. Rings readily unscrewed for quick access to recalibrator. Note retard scale on compound gauge for close reading in important testing range.

Serviceman

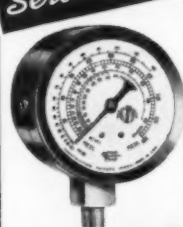
DELUXE 3-SCALE



Like the standard model above, but has two added, color-differentiated scales showing corresponding pressures of Freon 12 and Freon 22. A beautiful instrument; a real time saver.

Serviceman

4-SCALE TESTING GAUGE



Three extra color-differentiated scales in this accurate testing gauge show temperature corresponding to pressure for sulphur dioxide, methyl chloride and Freon. Ranges for all needs.

Serviceman

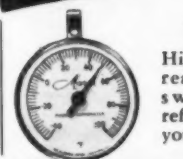
TIMER

Useful new arrival in "Serviceman" family shows total *running* time and total *elapsed* time of refrigerating unit on 24-hour dial. Easier to use and read than expensive recorder; costs far less. Two models cover all conditions.



Serviceman

POCKET THERMOMETER



Highly accurate; easy to read; equipped with swivel to hang in refrigerator or clip in your pocket.

MARSH

Refrigeration Instruments

MARSH INSTRUMENT CO.

Sales affiliate of Jos. P. Marsh Corporation
Dept. P, Skokie, Ill.

GOOD NEWS — AND BAD!



DISCONCERTED but delighted is Paul Nankivell, director of sales for Northern Indiana Brass Co. Nibco issued a new catalog last February, and was swamped with requests for more than 30,000 copies in the first two weeks after publication. This unprecedented demand completely exhausted the initial printing. Nankivell's apparent frustration is due to the phone message he has just received — his printer just informed him that he can't have the reprints of the catalog as soon as he wanted them. Even though Nankivell was temporarily set back by this news, he was naturally gratified by the splendid reception that the new catalog had met throughout the industry.

BUY FROM YOUR REFRIGERATION WHOLESALE



MEET THE NEW CHAMP

The MIGHTY TEMPRITE "BANTAM 100" CARBONATOR

**PACKS A REAL
SALES PUNCH**

Weights 28 lbs.

13½" long x 9½"
wide x 12" high.



FULLY AUTOMATIC, delivers up to 100 gallons per hour of highly carbonated water... for a sparkling beverage that's a pleasure to serve and a double-pleasure to drink! Use with any type cooling system.

COMPACT, easy to handle! Little space required. Pump and motor, relay and carbonator assembled together for the simplest possible installation.

SAVES REAL MONEY, because of high-capacity operating efficiency, plus other cost-conserving features!

BIG ACTIVE MARKETS FOR YOU! Soda fountains, road-side stands and drive-ins, restaurants, bars and taverns, home recreation rooms and vending machines—they're all ready for Temprite's mighty power-packed "Bantam 100"!



Circle No. 40 on Reader Service Card

TEMPRITE PRODUCTS CORP.

P.O. Box 72-B

Birmingham, Michigan

☐ Send me data on the Temprite "Bantam 100" Carbonator.

☐ Ask your representative to call.

Name _____

Address _____ Zone _____

City _____ State _____

DEVELOPS GREENHOUSE VENTILATION CONTROLS

An improved greenhouse ventilation control that frees employees from the time-consuming task of opening and closing ventilator windows has been developed by Minneapolis-Honeywell Regulator Co.

The new system automatically positions the vents more accurately than can be done by hand, the company said.

"Brain" of the system is the sensitive new T-820D thermostat which uses built-in heating-cooling "anti-

cipation" elements to proportion the movements of the vents according to minute temperature changes in the greenhouse.

Use of the new electric elements in the thermostat prevents over- and under-shooting of temperatures in the greenhouse by properly positioning the vents before outside weather changes can affect delicate plants. The amount of heat applied to the thermostat can be adjusted as required to match the characteristics of each greenhouse.

The $\frac{1}{6}$ horsepower instantly re-

versible motor — specially designed for use with the new system — can be adapted to a conventional ventilation system by removing the manual crank and connecting the motor shaft to the crank handle shaft.

The system includes two relays, a timer device for regulating the speed of ventilator movement, a control switching sub-panel for manual operation and a vent position panel which is attached to one of the ventilators to limit the vent movement as selected on the thermostat control panel.

Humidity control is obtained through the installation of Honeywell's H-61 humidity controller which may either prevent ventilators from closing tightly or may open them to the "crack" position when inside humidity levels become too high.

"Freeze-up" protection is provided by the company's T-615 temperature controller which keeps ventilators closed tightly as long as icing conditions prevail, but permits manual operation if desired. As soon as the ice disappears automatic operation is restored.



Service-Master

THE IDEAL AIR CONDITIONING AND REFRIGERATION SERVICE BODY

Here's the body that takes a completely equipped shop to the job, and saves up to 75 minutes per day. Using the latest average service base rate of 6 cents a minute and an average saving of 30 min-

utes a day . . . Service-Master saves \$478.00 worth of time a year. Available in sizes for $\frac{1}{2}$, $\frac{3}{4}$, 1, and $1\frac{1}{2}$ ton chassis — regardless of age or make. The coupon below will bring complete details.

MAKE YOUR PICK-UP TRUCK A SERVICE TRUCK, TOO!

with
SERVICE-TWINS

These easy-to-install tool and material compartments are finished in baked-on, medium-dark green enamel. Parts bins are built-in. Doors have slam-action catches, with locks keyed alike. Available with overhead rack.

for $\frac{1}{2}$ and $\frac{3}{4}$ ton pick-up trucks



McCABE-POWERS AUTO BODY CO. 5900 NO. BROADWAY • ST. LOUIS 15, MO.

Please send me complete details on SERVICE-MASTER ☐ SERVICE-TWINS ☐

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

Circle No. 41 on Reader Service Card

TRANNEY ADDRESSES EDUCATIONAL MEETING

Leon Traney, sales engineer for Bush Mfg. Co. was guest speaker at a recent educational meeting sponsored by Larson Supply Co., Allentown, Pa.

The program covered the sizing and application of commercial forced air units with emphasis on automatic defrosting as it pertains to medium and low temperature units.

In attendance were 33 contractors plus representatives of Larson Supply Co.'s Allentown and Reading branches.

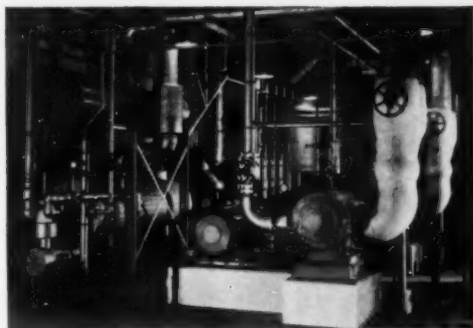
BRUNNER NAMES CHICAGO AREA DISTRIBUTOR

Service Parts Co., Melrose Park, Ill., has been named exclusive distributor by Brunner Mfg. Co. for the entire Brunner line of open and semi-hermetic refrigeration condensing units and compressors. Headed by Pat Ravanese, Service Parts will also handle Brunner's BAC line of self-contained air conditioning units.

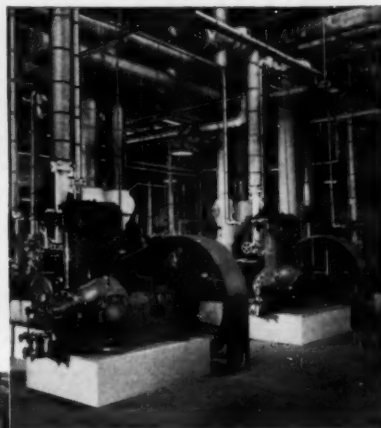
BAKER and FULLER COMPRESSOR operated by

ALLEN-BRADLEY

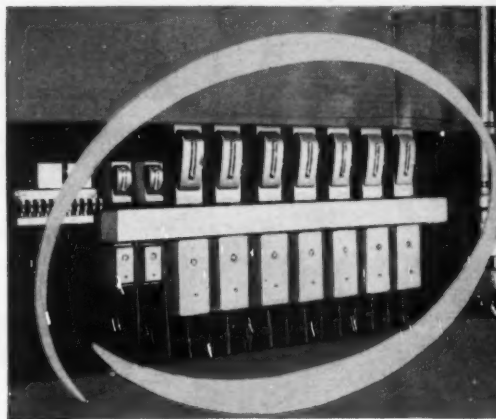
TROUBLE FREE MOTOR CONTROLS



Three Fuller rotary booster compressors.



Four Baker Ice Machine Company compressors.



Baker and Fuller compressors controlled by Allen-Bradley at Continental Freezers of Illinois, Inc., Chicago.

Why are Allen-Bradley starters so popular for refrigeration and air-conditioning service? . . . Because they do not require regular attention—they are trouble free. Only ONE moving part. No pivots, pins, or bearings to corrode or stick . . . no jumpers to break. You install them . . . and forget them!

No contact maintenance . . . Allen-Bradley double break, cadmium silver alloy contacts never need cleaning, filing, or dressing. Allen-Bradley thermal relays are dependable and remain accurate in their operation, even after long service.

The Allen-Bradley trademark stands for millions of trouble free operations. Install Allen-Bradley motor controls in your equipment, today, for rugged, reliable performance.

Allen-Bradley Co., 1340 S. Second St., Milwaukee 4, Wis.



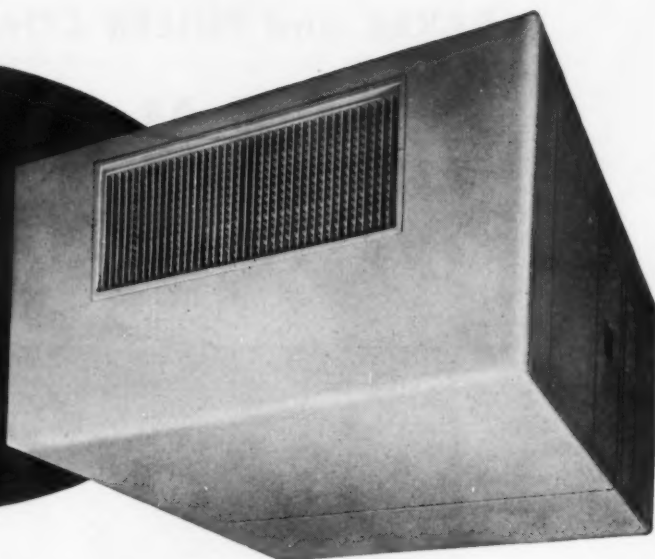
Allen-Bradley
Bulletin 709 Solenoid
Starter, Size 4.



ALLEN-BRADLEY SOLENOID MOTOR CONTROLS

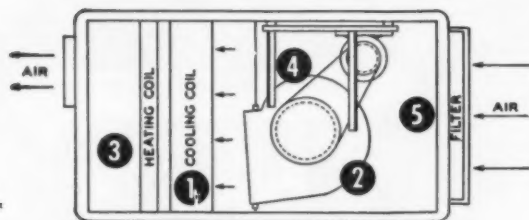
QUALITY MOTOR CONTROLS FOR HEATING, VENTILATING, AIR CONDITIONING, & REFRIGERATION INDUSTRIES

NEW FEATURES of PROVEN MERIT



KRAMER

AIR CONDITIONING UNITS



1

MUGGY-AIR-CONTROL

It "squeezes" extra moisture from the air on muggy days without reheating, dampers or excessive cooling. No short cycling and uncomfortable conditions.

2

"BLOW-THROUGH" DESIGN

Fan-motor assembly always exposed to normal room temperatures. A unique design with many advantages, resulting in —
No motor overload and no loss of bearing lubricant from hot air of the heating coils.
No corrosion of fan-scroll assembly from moisture carry-over of the cooling coils.

3

ANTI-SWEAT CONSTRUCTION

Only a small portion of the casing is exposed to cooled air; that section is heavily insulated.

Access doors and grille have scientific anti-sweat designs.

4

QUIET OPERATION

The fans and motor form an integrated assembly independently rubber-mounted to the casing. All moving parts are completely isolated by rubber.

5

FOR FINISHED INTERIORS

Graceful lines with no unsightly belts, motor and guards exposed to view. Finished in hammer gray enamel.

MANY OTHER OUTSTANDING FEATURES.

WRITE FOR BULLETIN AC-238

KRAMER TRENTON CO. • Trenton 5, N.J.

NEWS OF THE INDUSTRY

WABASH INTRODUCES AUTO COOLING UNIT

Wabash Mfg. Co. has announced its entrance into the automotive air conditioning field with the introduction of an automobile air conditioner, which will be distributed through refrigeration jobbers and installed by refrigeration dealers and contractors.

Differing from other automobile air conditioners, the Wabash unit's evaporator and blower assembly is designed for location under the dashboard, eliminating long lines and cumbersome installation problems covered in trunk installations.

Powered by a 2-cylinder compressor belted directly to the automobile engine, the list price of the Wabash unit is \$399.95.

EXPANSION PLANNED BY GEN. CHEMICAL

General Chemical Div. of Allied Chemical & Dye Corp. has announced plans to expand facilities at its Baton Rouge Works and to build a large new plant in Danville, Ill.

Both sites will be used for the further manufacture of "Genetron" refrigerants and aerosol propellents. The Baton Rouge expansion is the second at the Louisiana plant. The plant's previous capacity had been tripled by a previous expansion. Plans call for completion of the Baton Rouge facilities around the end of 1954.

A 73-acre site east of Danville is the proposed location of the Illinois plant. Detailed plans have not yet been made, but the company expects to start construction as soon as possible with the view to having the plant in production in 1955.

PRODUCTION MILESTONE REACHED



THE 100,000TH Vornado air conditioning unit to roll off the production line in O. A. Sutton Corp.'s Wichita plant is inspected by (left to right) H. K. Bentz, vice president in charge of manufacturing; H. W. Kratzer, industrial department manager of the Wichita Chamber of Commerce; H. W. Van Auken, manager of the Chamber of Commerce; and Austin Rising, vice president in charge of sales for Vornado.

MADDEN PLANT NOW IN AURORA, ILL.

As of June 1, Madden Brass Products Co. will occupy new quarters at 948 Oliver St., Aurora, Ill., 38 miles southwest of Chicago. According to M. B. Madden, president, the new quarters were found necessary due to the company's growth, and to permit more efficient operation and better service to customers. Madden products include brass flare, pipe, compression fittings, gas appliance connectors, shut-off cocks and refrigeration accessories.

14 MORE FIRMS ARI MEMBERS

The Air-Conditioning and Refrigeration Institute recently announced the following new members:

Burnham Corp., Irvington, N. Y.; Gibson Refrigerator Co., Greenville, Mich.; Governair Corp., Oklahoma City; Hotpoint Co., Chicago; International Harvester Co.,

Chicago; Keco Industries, Inc., Cincinnati; Lonergan Mfg. Co., Albion, Mich.; Quiet-Heat Mfg. Corp., Newark; Reynolds Metals Co., Louisville, Ky.; Tywel Mfg. Corp., Brooklyn; Universal Major elec Appliances, Inc., Lima, Ohio; Welbilt Stove Co., Inc., Maspeth, L. I.; Soreng Products Corp., Schiller Park, Ill.; Superior Foundry, Inc., Cleveland.

This brings the membership of ARI to 168.

WAGNER RELOCATES ATLANTA FACILITIES

Wagner Electric Corp. has relocated its electrical branch office and warehouse facilities in Atlanta, Ga., to 1536 Boulevard Ave.

This modern building contains 20,000 sq. ft. of floor space and air conditioned offices. Efficient dock facilities and ample parking area is also provided.

W. E. Prewitt is manager of the electrical branch office.

ROOM COOLER SALES UP 95% OVER '53

Shipments of room air conditioners by manufacturers during the first three months of 1954 show a surprising increase of 95.3% over the same three months of 1953, according to Geo. S. Jones, Jr., managing director of the Air-Conditioning and Refrigeration Institute, Washington, D. C.

This increase is reflected in a study just completed by ARI which shows that about 568,400 room air-conditioning units were shipped by manufacturers during the first quarter of 1954 compared with 291,170 units during the first quarter of 1953.

SERVEL DOUBLES CHILLER OUTPUT

Production of heavy-duty water chillers, already increased over last year's rate, has now been doubled again by Servel, Inc.

H. R. Nielsen, manager of Servel's air conditioning division, announced today that the development of new uses for chilled water and the increased demand for this equipment had made it necessary to step up the company's output by 100% over the original schedule for 1954.

The Servel water chiller is an absorption-type unit that uses steam to produce chilled water for air conditioning or industrial processing. It has a capacity of 25 tons of refrigeration.

TACO MOVES PLANT

After over 33 years at 137 South St., Providence, R. I., Taco Heaters, Inc. has moved into considerably larger quarters at 1160 Cranston St., Cranston, R. I.

VIBRATION PROBLEM?



ENGINEERS AND SERVICEMEN! Are you confronted with vibration and noise problems in compressor lines? If so, specify **PACKLESS Flexible Vibration Absorbers** for the answer. Size range to fit 1/4" O.D.—10 1/8" O.D. copper tubing.

Write for Bulletin VA-3

PACKLESS
METAL HOSE INC.

31-10 WINTHROP AVE., NEW ROCHELLE, N. Y.



Your Key
to Better
Refrigeration
Sales

COLDIN

WRITE NOW
...for the **NEW 1954 Coldin**
Catalogue showing the
current and complete **Com-**
mercial Refrigeration line.

Coldin
EST. 1922

COLDIN CABINET CO., Inc.

2800 Webster Avenue
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Circle No. 44 on Reader Service Card

COOLING FOR HIGH-FLIERS



AIRLINE PASSENGERS need cooling on the ground as well as aloft, so Eastern Airlines provides mobile air conditioning units to cool passengers while planes wait at the Miami, Fla., air terminal. The unit is driven alongside the plane and a flexible air hose is connected to a duct in the craft's ventilation system. Cool, filtered air is delivered into the cabin at velocities up to 2,000 cu.ft./min. In winter months, the cooling unit is cut out of the mobile system and a gasoline heater powerful enough to heat four homes is combined with the blowers to pre-heat cold airplanes.

TRANE LAB TESTS NEW EQUIPMENT

In the newly constructed research and testing laboratory of Trane Co., engineers can manipulate weather conditions to extremes, in producing samples of "terrible weather" from almost anywhere in the world in order to develop machines which will overcome the weather conditions.

The laboratory, located in La Crosse, Wis., enables the pre-testing of equipment for use anywhere from Arctic regions to Equator. It contains facilities for duplicating a wide variety of temperature and humidity, pressure and air movement conditions.

One of the laboratory's two cold rooms permits the temperature to be driven down to -65 degrees. The other extreme is an atmosphere-controlled furnace where the temperature can be sent up to 2,500 degrees for research in new methods of fabricating heat exchangers.

One of the laboratory's larger section houses most of the air tunnels which help the design of tomorrow's man-made climates by providing data on newly developed air conditioning, heating, ventilating and heat transfer equipment.

Other testing facilities include a room-within-a-room

that floats on felt and rubber in which are conducted tests to determine noise sources in various types of equipment; an instrument calibration room; testing equipment for controlling water temperature and cooling load of hermetic centrifugal compressors; and chemical and metallurgical facilities for analysis of metals, oils, and refrigerants.

ASRE MAPS PLANS FOR JULY MEETING

A program of technical and social activity has been presented by the American Society of Refrigerating Engineers in the announcement of their 41st Semi-Annual Meeting to be held July 11-14 at the Olympic Hotel, Seattle, Wash.

The program for Seattle includes a series of four forums, or seminars, at which discussions will be held on: (a) Oil Problems with Freon 22, (b) Capillary Tubes versus Expansion Valves on Commercial Self-Contained Air Conditioners, (c) Refrigeration Problems in the Meat Packing Industry and (d) New Thinking on Short Form Air Conditioning Load Calculations. These forums will consist of strictly informal, non-recorded, round-table discussions.

AIRTEMP OPENS 15 REPAIR STATIONS

Chrysler Airtemp has established 15 new "packaged" air conditioning compressor rebuilding stations in key service areas, according to T. B. Hollencamp, national service manager.

Organized and approved according to Airtemp factory standards, the rebuilding stations provide shipping convenience and facilitate repair or replacement of both in-warranty and out-of-warranty compressors.

The stations are equipped to repair compressors using manufacturer - prescribed methods of crankcase and parts cleaning, assembly, motor rebuilding, dehydration and run-in tests.

Compressors for use on a rotating stock basis are being carried by the stations. Depending on available stock, the station will either replace or repair a returned compressor. Locating of the rebuild stations so as to meet the needs of the service areas has substantially reduced shipping and handling time.

Airtemp Distributors and Dealers will also maintain representative compressor stocks so that compressor transactions between themselves and the nearest rebuild station will involve minimum delay to the user.

Cities in which the rebuilding stations are located are: Durham, N. C.; Atlanta, Ga.; Chicago, Ill.; Houston and Dallas, Tex.; Kansas City, Mo.; Omaha, Neb.; New York, N. Y.; Philadelphia, Pa.; Memphis, Tenn.; Washington, D. C.; Miami, Fla.; Phoenix, Ariz.; Alhambra, Calif.; and Seattle, Wash.

WIN SCHOLARSHIPS FOR COOLING STUDY

Norman Nichols of Rivera, and Gerald Hoxsie of San Luis Obispo, California, have been awarded two \$1000 four-year air conditioning and refrigeration scholarships established at California State Polytechnic College.

Both winners plan to enter Cal Poly in the fall as air conditioning and refrigeration

engineering majors. Both scored high in competitive examinations.

The scholarships provide for payment of \$250 per year to each winner as he progresses through his four years of college. Nichol's scholarship was established by Drayer-Hanson Corp. and Hoxsie's scholarship was established by representatives of the industry at large.

BUSH AND HEAT-X ALTER SALES AREAS

Bush Manufacturing Co. and its wholly-owned subsidiary, Heat-X-Changer Co. have announced a reorganization of their sales territories into five districts covering the country.

Charles T. Cavanaugh has been appointed sales manager for the newly-formed northeastern district, including New England, upper New York state, eastern Canada and the Cleveland and Pittsburgh areas.

Cavanaugh has been associated with Bush since 1942 and for the past 3 years has been western New England representative for both Bush and Heat-X.

George Finck will continue to head the New York district office, that territory being expanded to include Philadelphia and Washington, D. C. The midwest district, headed by J. K. Campbell with offices in Chicago, has been enlarged to include part of the Ohio area.

The Joe E. Parker Co., Atlanta, Ga., will serve as southern district headquarters and the western district, with H. L. Quinn as district manager, will have headquarters at the new Bush plant in Riverside, Calif.

CORY OPENS NEW CONTRACT SALES DIV.

Organization of a new contract sales division to promote the sale of Fresh'nd-Aire air conditioners to the commercial and institutional field has been announced by J. W. Alsdorf, president of Cory Corp.

The new sales division will be headed by Frank Power, sales manager.

CLIMATROL SALES VETS RETIRE



REPRESENTING 70 YEARS of service as sales representatives for Mueller Climatrol, Harry McKee (left), and Ernie Liessmann congratulate each other on their retirement May 1st. Liessmann, who started with Mueller 43 years ago covered Wisconsin, upper Michigan, northern Illinois, Iowa and part of Minnesota. McKee was Mueller's Illinois sales representative.

G-E's 1ST QUARTER UP 100% OVER '53

The best first quarter on record for General Electric Co.'s Air Conditioning Div., was reported today by F. J. Van Poppelen, general manager of the division. Orders for most lines were up 100% over the first quarter of 1953, the G-E division's previous record year.

Van Poppelen reported shipments for the first quarter of 1954 are more than double those of the same period last year.

"The demand for air conditioning and heating equipment has been tremendous", he said. "A new plant acquired last August has helped us boost production to meet this demand and still another plant will be added during the second quarter. Plans are under way for further expansion in the next several years."

Van Poppelen said that one of the indicators pointing to an excellent year for air conditioning in 1954 is the fact that dollar volume of commercial and residential construction for the first quarter is up from 1953 levels and should continue relatively high throughout 1954.

"Higher construction figures are almost synonymous with higher air conditioning figures" he noted, "because no commercial building is

considered truly modern today unless it is air conditioned. The same trend is evident in the residential field.

"However, the air conditioning industry can expect to move ahead much faster than new construction because of the big market in existing buildings. Last year about 50% of residential air conditioning installations were made in existing homes.

In the commercial field approximately three-quarters of all units were installed in present structures, and the increasing trend to packaged equipment is giving further impetus to air conditioning of existing commercial buildings and factories.

The G-E official predicted a continuing bright industry outlook and noted almost unlimited room for growth. He cited present central air conditioning saturation of only 2/10 of one percent of all wired homes and predicted that in ten years 8 out of 10 new homes of average price would be centrally air conditioned.

"Sales of heat pumps," Van Poppelen said, "are forging ahead. In our own case, since introducing the Weathertron heat pump early in 1952, our sales have accelerated so that first quarter figures this year are 400% of last year's first quarter sales."

ADOPTS UNILECTRIC AS CORPORATE NAME

Unilectric, Inc., is the new corporate name which has been adopted by the board of directors of United Manufacturing & Service Co., according to Halbert W. Hoard, president.

The registered trade-mark, Unilectric, has become widely known throughout the electrical industry in connection with the products manufactured by this company, according to Hoard. The change is intended to identify the trademark with the corporate name.

NAMED TO HEAD WAREHOUSE GROUP

At the 63rd annual meeting of the National Association of Refrigerated Warehouses held in Boca Raton, Fla., Millard W. Young vice president and general manager of the National Ice & Cold Storage Co. of California, was elected president of the association.

NAMES FIRST AWARD WINNER

Gerald R. Thomas has received the first award of the scholarship in Refrigeration Technology under the plan instituted by Sherer-Gillett Co.

The award carries with it not only the \$1200 cash value of the scholarship itself, but also assurance of employment at Sherer's factory during summer vacations, and the opportunity for permanent employment by the company upon completion of the course.

Under the scholarship plan an annual two-year scholarship is awarded for study at Ferris Institute at Big Rapids, Mich. Applicants are judged by the superintendent of schools in Marshall, Mich., together with two executives of Sherer-Gillett.

"Our primary purpose in establishing the scholarship," said John H. Coolidge, Sherer-Gillett president, "is to try and direct at least one young man each year from our local graduating class into the

commercial refrigeration field.

"We feel that it offers an excellent opportunity in a growing industry and that if we can help to provide a basic theoretical and practical education in refrigeration, the industry will benefit and the young man himself should be able to make good progress no matter with which company he should affiliate."

NAME ERVASTI TO HEAD ARI SECTION

E. W. Ervasti has been appointed chairman of the Tubular Products Section of the Air-Conditioning & Refrigeration Institute at the ARI annual meeting.

Ervasti is manager of Industrial Sales for Wolverine Tube Div. of Calumet & Hecla, Inc. Ervasti indicated after his appointment that a thorough investigation would be made on the use of aluminum tube and aluminum to copper connectors in refrigeration systems.

REMINGTON OFFERS PRICE PROTECTION

A price protection policy which protects dealers and distributors against any loss due to price reduction on unsold inventories of Remington room air conditioners, has been announced by Herbert L. Laube, Remington Corp. president.

This policy covers dealers and distributors for the full amount of any reduction in current 1954 wholesale distributors' prices which Remington may make prior to June 15. For the distributor to be eligible, he must extend proportionate price protection to his dealers.

FIRM CHANGES NAME

Precision Chemical Pump Corp. is the new name of the former Precision Machine Co. of 8 Walnut St., Somerville, Mass.

The corporation will continue production of chemical and slurry pumps at the same address.

NEED

heavy duty, large capacity water level controls? Maid-O'-Mist's No. 6900 series float control diaphragm valves are especially designed for air conditioning equipment, evaporative coolers, air washers, etc., and will accurately control water at any level. Water can be discharged upward or downward as specified.

WATER LINE FLOAT CONTROL VALVES



- ✓ CAPACITIES:
1 1/4 gals. to
6 gals. per minute
- ✓ CAST BRASS BODY
- ✓ COPPER FLOAT
- ✓ NEOPRENE DIAPHRAGM
- ✓ INLET AND OUTLET
TAPPING
3/8" I.P.T.

BRASS
MOUNTING PLATE

Available for special
mountings

MAID-O'-MIST, Inc.

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Your Sales are the payoff

AUTOMATIC KUBER

AND LA CROSSE GIVES YOU MORE OF EVERYTHING YOUR CUSTOMERS WANT MOST IN COMMERCIAL REFRIGERATION EQUIPMENT

SELF CONTAINED BOTTLE COOLER

DIRECT DRAW

SELF CONTAINED BLUEBIRD

DRAINBOARD

ICE CUBE MAKER
12 TRAY

PRE-COOLER

LA CROSSE

THE LINE THAT'S PROFIT DESIGNED FOR YOU

LA CROSSE COOLER CO.

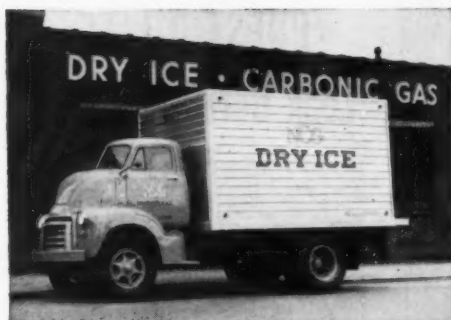
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JULY, 1954 • COMMERCIAL REFRIGERATION

STYROFOAM INSULATES LONGER, MORE EFFECTIVELY



"For the past two years, we have used Styrofoam at many of our plants for insulating storage rooms, truck bodies and other uses."



NCG

NATIONAL CYLINDER GAS COMPANY

General Offices: 840 N. MICHIGAN AVENUE • CHICAGO 11, ILLINOIS
Telephone: WHinhall 4-9100

December 4, 1953

Mr. John T. Rayburn
The Dow Chemical Company
135 South LaSalle Street
Chicago 3 Illinois

Dear Mr. Rayburn:

In the manufacture and distribution of CO-2 gas and dry ice, efficient insulation is an operational necessity. Our use of Styrofoam has shown that it possesses excellent characteristics as a low temperature insulating material.

For the past two years, we have used Styrofoam at many of our plants for insulating storage rooms, truck bodies and other uses. During this time we have found the performance of Styrofoam to be most satisfactory. Its resistance to water and water vapor insures a constant insulating value. This, together with its light weight and good mechanical properties, have kept maintenance work at a minimum. Because of these and other advantages coupled with low initial cost, we have found Styrofoam effectively fulfills our requirements as a low temperature insulation.

Our continually increasing use of Styrofoam is the best evidence of our high opinion of its qualities.

Yours very truly,

NATIONAL CYLINDER GAS COMPANY

F. F. Droste
F. F. Droste, Manager
Carbon Dioxide Division

pfd/mw

National Cylinder Gas Company uses STYROFOAM low-temperature board insulation for low thermal conductivity, water resistance and long service life

THE DOW CHEMICAL COMPANY

Plastics Sales, PL 653B, Midland, Michigan

Please send me your booklet containing information on Styrofoam low-temperature insulation material.

Name _____

Title _____

Company _____

Address _____

City _____

State _____

Styrofoam® (Dow expanded polystyrene) rigid low-temperature board insulation combines *all* these desired factors:

- Low "K" Factor • Odorless • Resistant to Rot and Mold
- Superior Water Resistance • Light Weight • Long Insulation Life
- Easy to Install • Low-Cost Installation, Maintenance, Operation
- All Standard Sizes

Whenever you investigate insulation for low-temperature rooms, insulated vehicles, refrigerated equipment, pipe covering or perimeter insulation, specify Styrofoam. Contact your Dow sales office for the name of your nearest distributor. Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • New York • Philadelphia • St. Louis • San Francisco • Seattle. Or write THE DOW CHEMICAL COMPANY, Plastics Sales, Midland, Michigan.

you can depend on DOW PLASTICS

DOW

NOW YOU CAN COMPETE!

... here's your EXTRA PROFIT line of

ELECTRIK-ICE

WATER COOLERS

YOUR LOW PRICE
\$132.00

NOW - WITH TOE-TRONIC FOOT CONTROL



MODEL E-554 SHOWN



UNIFLOW offers a complete line of low cost Water Coolers (up to 14 gallons capacity) for dealers'

EXTRA PROFITS and Customer's satisfaction. Write for
● FREE ● brochure TODAY.

UNIFLOW

MANUFACTURING COMPANY
1513 East Lake Road
ERIE, PENNA.

"A Leader In The Water Cooler Field For Over 20 Years"

Circle No. 50 on Reader Service Card

56

ALL THE BEER . . .

Continued from page 41

"Milk - Butter - Cheese" legends imprinted on these cases by the manufacturer.

The effectiveness of Perry's merchandising idea has spread so well, largely by word of mouth and without any particular promotion of his own, that he has sold some 50 of these used dairy cases in the past couple of years. Exhausting the local supply of used cases of this type, he now has a working arrangement with the Indianapolis, Ind., outlets of this same food chain, where a similar conversion program is underway.

GIVE A LIFT . . .

Continued from page 36

By simply reversing these procedures, any piece of equipment can be just as readily handled when the time comes to load it onto a truck for delivery to the customer's place of business.

"When we were in our old building, and had no equipment such as this," Taylor reports, "it was necessary to use skids in unloading. Two of our men suffered ruptures which we believe resulted from this heavy lifting, so we determined to find an easier way to handle this work."

"Total cost of the hoist was about \$1,000 when it was purchased some 7 years ago," Taylor recalls. This price included the hoist, the air compressor, and the hydraulic tank. The same compressor provides air for cleaning, spraying, and other purposes throughout our entire building.

"This equipment has been in use ever since its purchase," Taylor testifies, "without repair of any kind, and we definitely feel that it has paid for itself many times over."

CORRECTION

IN THE Lehigh Mfg. Co. advertisement which appeared on page 6 of our June issue, it was incorrectly stated that Lehigh's Hermetic Line is available in sizes from "1/5 H.P. thru 5 H.P.". The line should have read "1/5 H.P. thru 1/2 H.P."

Please take note of this important change when referring to that advertisement.

FAST DEPENDABLE ECONOMICAL

PREST-O-LITE

Trade-Mark

Leak Detector Outfit



Fully adjustable gas regulator, 12 1/2 ft. of hose, precision handle, leak detecting stem, and suction hose complete this valuable kit.

You can quickly locate the most minute leaks of halide refrigerant gases with this handy, air-acetylene, leak detecting outfit. An extra-long hose lets you work unhampered in those hard-to-get-at places. And a shutoff valve and built-in pilot flame control in the handle give you real convenience and economy. Ask your LINDE jobber for a demonstration. Or write LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Dominion Oxygen Company, Toronto.

GET IT FROM YOUR
LINDE JOBBER

The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

Circle No. 49 on Reader Service Card
COMMERCIAL REFRIGERATION

JULY, 1954 •

5 second demonstration

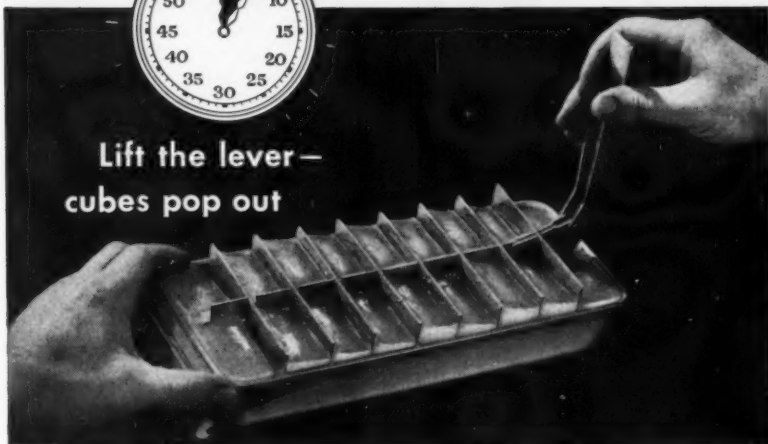
shows your customers the outstanding value of **Frigidaire**
Quickube Ice Trays



Touch the handle—
tray slides out



Lift the lever—
cubes pop out



Exclusive
"Double-Easy" action
sells every
refrigerator owner

It's simple to demonstrate the extra value of these Quickube Trays. And they'll prove their value to you, too, as a special fast-sale item to sell on service calls—to bring customers into your store—or as a "dress-up" touch to help move used refrigerators. Frigidaire Quickube Trays are the *only* ice trays with built-in tray and cube release. They're priced right, too, and come in sizes to fit most every refrigerator, regardless of make, model or age!

So lay in a good supply of all sizes and types right now during the peak selling season.

Remember, Quickube Trays, like all genuine Frigidaire Parts, are warranted for lasting satisfaction. See your Frigidaire Parts Distributor, today—there's one near you. Always specify—always use genuine precision-built Frigidaire Parts and Accessories.

Quickube Ice Trays are made only by



Frigidaire

and AIR CONDITIONING • JULY, 1954

Circle No. 51 on Reader Service Card

*Now—6 popular sizes to
choose from, including beautiful
new, golden-finished models!*

WRAPPED IN GLASS . . .

Continued from page 35

Niagara "No-Frost" units. Design of the refrigerator system makes possible a completely automatic operation, with periodic checks to see that the lubrication systems of the compressors contain ample oil.

A Minneapolis-Honeywell temperature controller is used to step up or step down the amount of desired compressor capacity. The temperature controller, through a Cut-

ler-Hammer control panel, will increase or decrease the number of compressors as the need arises.

Selection of compressors was based upon total refrigeration capacity needed at worst possible condition. Allowance was made for capacity increases in steps of from 15 to 35 tons each. There are eight possible combinations of tonnages.

Two layers of asphalt-enclosed Fiberglas board, each 4" thick, were installed between two concrete slabs in floor areas. They were applied in flood coats of hot asphalt.

Walls, 26 feet high to the roof deck, were insulated by installing vapor barrier paper in cold asphalt adhesive and applying two 4" layers of Fiberglas preformed insulation. Each layer is supported by treated wood girts and studs. Partition walls were insulated in a similar manner with a single 4" layer on each side.

In roof areas, four layers of roof insulation, each 2 1/4" thick, were installed to a thickness of 9". The vapor barrier paper on the walls is joined to the built-up roofing to form a continuous barrier. An expansion joint of 1" pre-formed insulation was installed between ceiling panels and the wall insulation. The interior was finished with perforated Masonite boards, each 1/8" thick, nailed to studs and with joints covered by narrow strips.

To insure a complete envelope of insulation, pre-formed insulation was installed behind wooden studding and an 8" thickness of insulation was applied beneath columns supporting the roof.

Asbestos Insulating Company of Tampa, Florida, was applicator of the Fiberglas insulation.

COLD FACTS ON WATER TREATMENT

**ANCO CONDENSER CLEANER
ANCO COOLING WATER
TREATMENT**

ANCO ALGAEICIDE

KEEP

**Condensers in Air Conditioning
and Refrigerating Systems at
Peak Efficiency!**

**ANCO ICE MACHINE
CLEANER**

**Removes scale from
Ice Machine Tubes and Drums.**

For Complete Information . . . Write or Phone

ANDERSON CHEMICAL CO.

QUALITY PRODUCTS AND SERVICE

P. O. BOX 1424 MACON, GEORGIA PHONE 2-7962

KATHABAR EXPANDS NATIONAL COVERAGE

Appointment of three new sales agents and the addition of another company representative in its New York office have been announced by the Kathabar Air Conditioning Div. of Surface Combustion Corp.

Natural Gas Equipment, Inc., will represent the division in northern California counties and the states of Oregon and Washington. Offices are maintained in San Francisco.

Humidity Conditioner Corp. will concentrate on the marine applications of Kathabar equipment for dry cargo conditioning and tankers. This same firm will also represent the division in the Philadelphia area.

George Q. McNamara Co. will represent this division in metropolitan Detroit and Four surrounding counties.

To increase coverage in New England, New York, New Jersey, Delaware, Maryland and upper Pennsylvania, Robert Harrison has been assigned as company sales and service representative to the New York office.



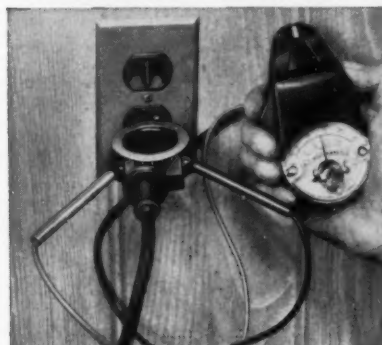
Check appliance current at receptacle



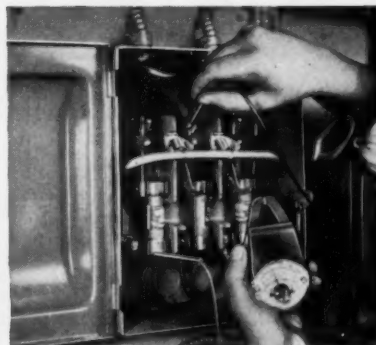
Trouble-shoot relays quickly



Instantly determine hot leg of receptacle



Check appliance voltage at receptacle



Instantly determine if fuses are good



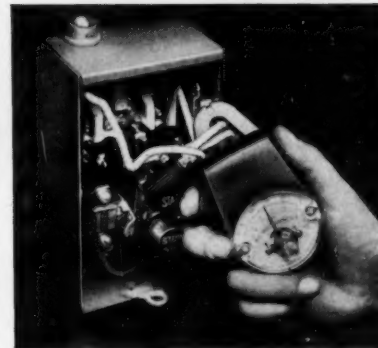
Know if the load is balanced



Know if windings are grounded



Check capacity of motor capacitors



Expand low-amp reading by doubling lead

Eliminate Guesswork!

One pocket tester measures voltage and current, with instrument accuracy, without shutting down equipment!

And the cost is only \$19.85 (just a few dollars more than an ordinary voltage tester), so every man can carry one!

Pick the Amprobe Junior that fits the job. 7 models from 0-10 amps to 0-100 amps; choice of either 0-125/250 volts A-C or 0-150/600 volts A-C range. For your higher current applications, multi-range Amprobes available for 300, 600 or 1200 amperes.

See the full Amprobe line of snap-around volt-ammeters at your jobber's today.

Send for valuable Amprobe service bulletins showing many more ways to save time and money on the job with an Amprobe. Mail coupon now to: PYRAMID INSTRUMENT CORP., LYNBROOK, N. Y. (Export Div.: 458 Broadway, N. Y. 14), world's largest manufacturers of snap-around volt-ammeters.

Amprobe Jr.*
snap-around volt-amp tester **\$19.85**
*©

Circle No. 53 on Reader Service Card
and AIR CONDITIONING • JULY, 1954

Send for these free Amprobe service bulletins:

Pyramid Instrument Corp.,
Dept. CR-74 Lynbrook, N. Y.

Please send me the Amprobe service bulletins checked below:

- ☐ UL wiring standards, room conditioners
- ☐ Trouble-shooting electric motors
- ☐ How to cut costs and land more jobs
- ☐ Portable test instruments

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



"Pressure will be back to normal in a few minutes"

Cooling towers, "evaps" and condensers get their headaches, too. One symptom is high head pressures, usually caused by accumulations of scale, slime and algae in the water-cooling equipment. Cooling efficiency drops—costs go up. A good remedy is a stiff dose of Solvex* Cleaner Tablets, which can be used while the machine is working. Head pressures usually return to normal in 15 to 45 minutes.

The way to prevent such troubles is to use Solvex Maintenance Tablets regularly. Solvex is quite

safe—no acids or alkalis to harm the operator or ruin expensive equipment. Solvex Cleaner and Solvex Maintenance Formulas also are obtainable in granular bulk (grains) for larger jobs.

Virginia Smelting Company distributes two other Solvex products of interest to the industry. One is "CC" Coating, a waterproofing and rust-preventive compound—excellent for use where galvanizing has failed. The other is Ice Machine Cleaner Powder—for eliminating the lime, grease and dirt which

cause machines to turn out opaque, bad-smelling and bad-tasting ice.

See your wholesaler, or write to Refrigeration Division, VIRGINIA SMELTING CO., Department 64, West Norfolk, Va.

*A product of Chemical Solvent Co.

VIRGINIA
Chemicals

ESOTO • V-METH-L • KINETIC CHEMICAL'S "FREONS"
CAN-O-GAS • PERMAGUM • PRESSTITE TAPE
SOLVEX PRODUCTS • SUNISO REFRIGERATION OILS
Available in Canada and many other countries

Circle No. 54 on Reader Service Card

THE COMMERCIAL REFRIGERATION and AIR CONDITIONING

APPLICATIONS MANUAL

by Hugo C. Smith

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

3 Different Systems Designed to Eliminate Frost Damage in Refrigerated Warehouses

AN interesting trend has recently developed in the construction of refrigerated warehouses. While formerly buildings of this type generally were of multi-story construction with low ceiling heights, the present tendency is toward a one-story building with head-room of 18 to 20 feet for palletized operation.

Guard Against Frost Damage

This type of refrigerated building presents the problem of frost penetration into the ground and under foundations, which may create serious upheaval of floors and columns. With the temperatures in the freezers down to 20° below zero, it is of utmost importance to properly protect the structure from damaging frost action.

Recently three large refrigerated warehouses of the above type have been constructed in various midwestern cities under different ownership. In each case a different method was employed to protect the structure.

One Method Uses No Insulation

In one case the concrete floor was poured directly on the ground without any insulation whatsoever. The theory in this case was that frost will penetrate into the ground to a considerable depth, solidifying the ground but not creating any upheaval, due to having provided thorough drainage of the underlying strata.

It was assumed that if the ground is adequately drained so that there will be no moisture whatsoever, it will freeze but will create no upheaval. As a secondary precaution,

lines of 2" steel pipe were laid under the floor transversely to the length of the building so that if it ever should become necessary the frost could be removed from under the floor by injecting steam into these underground steel pipes.

Sandwiches Insulation Between Floors

In the second case, the floor was also laid on the ground, but penetration of frost into the ground is being prevented by a heavy layer of insulating material on top of the concrete floor. On top of the insulating material there was installed a three-inch concrete floor for wearing purposes. In this instance tile ventilating ducts were also installed at frequent intervals under the floor to create an air current that would further prevent frost penetration. These tile ventilating ducts were laid in gravel beds for better circulation.

Creates Plenum Chamber

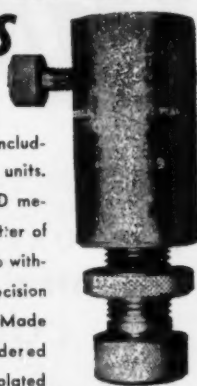
In the third case, the first floor was designed as a structural floor at car and truck level and supported on concrete columns with independent foundations. There is approximately 4' of space between the floor and grade, forming sort of a plenum chamber. The floor itself is insulated on top and a wearing concrete surface is placed on top of the insulation. As additional precaution, openings were left in the side walls between the grade and the first floor where blower units were installed to circulate air under the floor.

In all three instances measures are

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VANE FILING FIXTURE FIT COLDSPOT VANES IN FIVE MINUTES

This tool is micro adjustable to all of the sizes of vanes including those of sealed units. Even an UNSKILLED mechanic can in a matter of 5 minutes do the job with the extreme precision of .0001 of an inch. Made of finest case hardened tool steel, heavily plated to insure lifetime service.

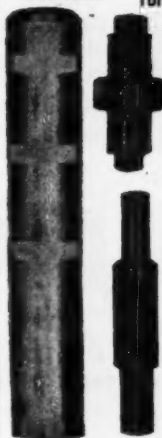


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DRIVE IN-OUT SET for COLDSPOT BEARINGS

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Part #P-3

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Circle No. 55 on Reader Service Card

being taken to record the temperature of the ground at various levels from the floor line down to the bottom of the concrete foundations by means of thermo-couples which automatically register temperatures on the indicator in the machinery room.

As the years go by it is hoped that the advantages or disadvantages of the various systems will become apparent for further determination of the best construction. Experimental work also is going on at several universities and at government laboratories that may shed further light on the whole subject.

DICK & CO. OPENS NEW N. CAROLINA BRANCH

Henry V. Dick & Co., Inc. refrigeration and air conditioning wholesaler, has opened a new branch in Asheville, N. C. Dick & Co. bought the refrigeration and heating department of Freck Radio & Supply Co. in Asheville and moved the entire inventory to 445 Biltmore Ave., Asheville.

T. E. Crawford, formerly with the Greenville, S. C. branch, has been named manager of the Asheville outlet.

AIRTEMP CHART TO HELP PICK PROPER SIZE UNIT

Buyers of Chrysler Airtemp room air conditioners will be assured a "perfect fit" with the aid of the company's newly-published Selector Guide for retail salesmen, according to J. F. Knoff, vice president in charge of sales.

The room air conditioner Selector Guide consists of four differently-calculated charts tailored to conditions in the four major climatic regions of the country. For instance, Minneapolis represents the cool region, while New York represents the temperate. Phoenix is representative of the hot, dry



Taco "CONTROLLED VELOCITY" Chillers

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Central Station
AIR CONDITIONING SYSTEMS

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1. Improved heat transfer . . . all refrigerant is in constant movement forward, at "controlled velocity".
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3. Rapid response to Thermal Expansion Valve . . . no liquid (refrigerant or oil) can accumulate in any part of the Chiller. At each head pass all liquid (refrigerant and oil) is agitated by a constant stream of expanding gas.

For full details and application data, send for Bulletin CWF and schematic on "Controlled Velocity".



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Condensate Coolers
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HOTEL USES ROOM UNITS



INDIVIDUALLY COOLED rooms are available in the 400-room Hotel Senator, Sacramento, Calif. as a result of the installation of 125 Frigidaire 1/3-hp window air conditioners last year. This system has worked out so well for the hotel that more installations are to follow in other rooms. By placing conditioners in adjacent rooms, only heat load from outside walls was considered in determining size of the units.

climate, and Miami typical of the hot, humid areas in the country.

"A salesman anywhere in the country will, without undergoing extensive training, be able to sell room air conditioners properly," Knoff says.

"His Selector Guide is an accurate and swift method of determining how effectively his prospect's room will be air conditioned before the air conditioner is installed. He will be able to present anticipated results to the customer with more confidence. And the Selector Guide eliminates guesswork and assures the customer of a properly-sized air conditioner to meet design conditions."

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UNIFLOW FEATURES

- ★ Heavy gauge tempered aluminum—inside and out.
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Write for full information on the most complete line of walk-in coolers/freezers in the industry. We will be pleased to send you our Dealer "Extra Profits" Brochure. Address your request to THOMAS A. MARTIN, Sales Manager.

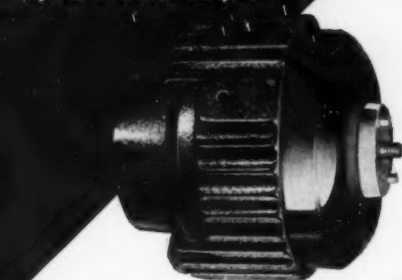


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Ready for either back or side mounting—let Redmond MonoMotors simplify your *replacement* jobs!

TOP QUALITY FEATURES include —

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outside installation



"packaged"

**central station air
conditioners save floor
space, ductwork
and labor costs**

usAIRco's outdoor locations of equipment have proved the answer to cooling existing buildings when lack of space prohibits the usual type of air conditioning installation.

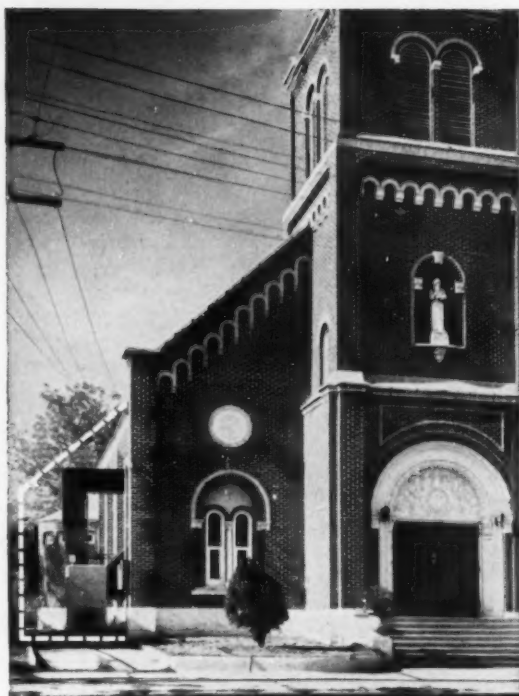
To air condition the Church of St. Francisco di Paola, a religious landmark of San Antonio, Texas, conserve space and preserve the architectural beauty of the church, inside and out, A. H. Thomas, engineer for G. H. Dillard Company, recommended placement of a 20 h.p. usAIRco packaged central station unit (RK) outside the building. The unit was shielded from view by construction of a matching extension to the brick front of the church. The supply duct leads through the outside wall and is concealed in the wall-like railing of the organ and choir loft located at the rear of the church. Five discharge grilles in the choir loft railing deliver the conditioned air at a low velocity, providing quiet, draftless cooling throughout the church. To allow for return of air, two stained glass windows, adjacent to the exterior location of the unit, were removed and replaced with return grilles.

Business needs demanded that the Big Apple Super Market of College Park, Georgia install an air conditioning system. Lack of floor space was the major obstacle. To overcome it, a usAIRco 20 h.p. Model RK was installed outside at the rear of the store. The built-in evaporative condenser saves 95% in water consumption by continuous recirculation.

Front view of Big Apple Super Market, air conditioned by usAIRco RK unit.



RK is installed at rear of store, with ductwork leading into store through rear wall.



Central station air conditioner of St. Francisco di Paola Church is concealed by extension of front wall of building, shown by dotted line.



Five discharge grilles at rear of church and two large return grilles are the only visible signs of air conditioning inside the building.

usAIRco
30 YEARS OF AIR CONDITIONING

For detailed information on usAIRco RK's, write Dept. CR 74

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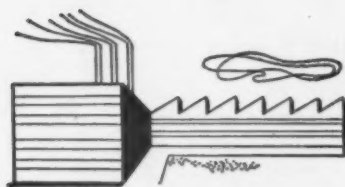
HEATING

AIR CONDITIONING

Section



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RESIDENTIAL

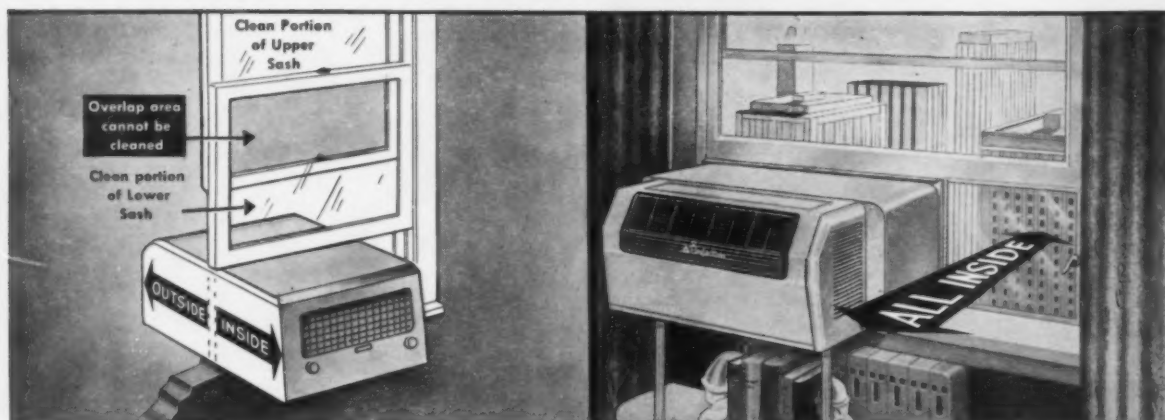
TABLE OF CONTENTS

Put the Heat Pump on the Spot	67
Build Sales for the Builder	68
Grilles, Registers and Diffusers	70
A practical guide to selection and location	
The Outlook for Air Conditioning	74
Useful Air Conditioning Literature	77
What's New in Air Conditioning Equipment	80

REVOLUTIONARY

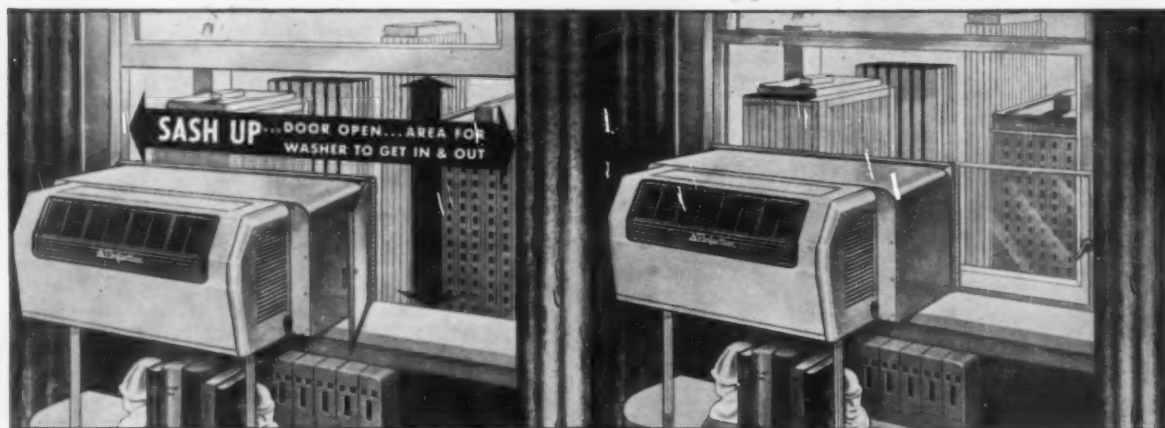
Air conditioner **ENTIRELY INSIDE** the glass line!

Here's why Perfection helps you "crack" profitable office building, hotel, motel and hospital markets . . .



ORDINARY INSTALLATION: Conventional room air conditioners must be installed partly inside, partly outside the window. Windows can never be fully closed or fully cleaned. This kind of installation must be permanently weather-sealed. Most building managements frown on such installations.

NEW PERFECTION "Inside-the-glass line" METHOD: With Perfection's exclusive adapter kit the unit can be installed *completely* inside the window. *Either* window sash can be **COMPLETELY** lowered or raised behind the unit. Building management gives its unqualified approval to the Perfection Room Air Conditioner.



BOTTOM SASH UP: With adapter door open and bottom sash up, window washers have plenty of room to get in and out when window cleaning is required.

BOTTOM SASH DOWN: Because lower window sash can be raised or lowered at will, **COMPLETE** cleaning of **BOTH** sides of upper and lower sash is possible.

Perfection HAS ALL THE ANSWERS

- Doesn't disfigure the face of building.
- Simplifies window washing.
- No dripping to stain building or annoy pedestrians.
- No winter storage problem.
- Four capacities in identical cabinets.
- No permanent weather-seal required.

Write or call . . . Perfection Stove Company, 7516-G Platt Avenue, Cleveland 4, Ohio

YOUR HOME DESERVES
Perfection

Circle No. 60 on Reader Service Card

TEST HOME built in suburban Kansas City by the local electric utility was specifically designed to . . .



Put the Heat Pump on the Spot

IS the air-to-air heat pump a practical medium for year-round air conditioning in the midlands climate where temperatures range from below zero on wintry days to above 100 F during the summer, and where mercury shifts of as much as 50 degrees in a 24-hour period are not uncommon?

This is the important question which the Kansas City Power & Light Co. hopes to answer in the completely instrumented test home which it has erected in Indian Fields, Johnson County, Kansas, a suburb of Kansas City.

This 2-bedroom ranch style house also is a showplace of up-to-the-minute electrical wiring and lighting, but that is only an added bonus the company built into its display home. The real purpose was to test under as near perfect conditions as possible the General Electric "Weathertron" heat pump unit to determine its operating efficiency under local climatic conditions.

The house was insulated as well as it could be, using standard methods but adding somewhat to the usual protection installation. The Weathertron selected for this laboratory was the 5-ton unit.

Engineers believe that the unit will meet fully the cooling needs of the heat pump's cycle. They doubt, however, that the unit alone will provide enough heat on the coldest days. Consequently, they have installed resistance heaters in the ductwork to act as a booster to the heat extracted by the Weathertron from the outside air.

The utility has installed other air-to-air heat pumps in the homes of one of its advertising department staff and of a physician at Prairie Village, Kansas, another suburban district near the laboratory house. On each of the three heat pumps there are batteries of meters and registering devices which constantly record inside and outside temperatures, compressor pressures, power load and demand.

A spokesman for the company stated that, when it was decided to make this full-fledged test of the air-to-air heat pump, representatives found that houses weren't built with enough insulation. "We were seeking the

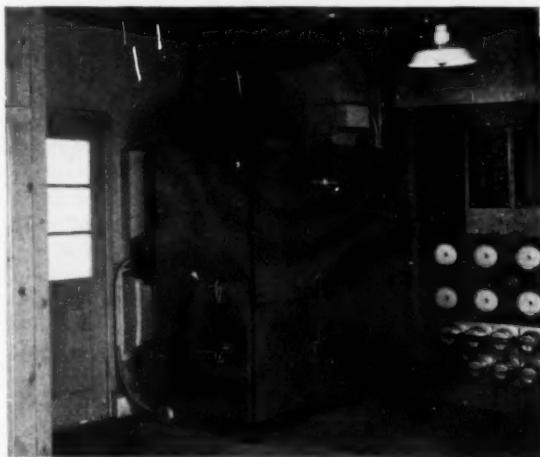
ideal," he explained, "so we built our own house to our specifications."

"From these three test installations," he continued, "we expect to obtain a complete record of year-round performance. We'll be able to compute accurately how much electricity is required to operate the pump and how much is needed to provide necessary resistance heating to meet the heating needs."

A thermostat has been installed on the outside of the house. It will turn on the resister blocks and, when they are on, the heat pump's output will float up and down to satisfy the demand.

Eventually, once the house is closed to the public as a display counter of latest electrical installations, a family will move into the place. Then the real testing will be

Continued on page 112



COMPLETELY INSTRUMENTED to record in detail the unit's performance under all weather conditions, the heat pump fits compactly into a corner of the two-car garage attached to the research residence.



TO SUCCESSFULLY SELL MORE
COOLING EQUIPMENT TO THE
NEW HOMES MARKET, THE AIR
CONDITIONING SALESMAN MUST . .

Build Sales for the Builder

THE building contractor specializing in the construction of new homes is definitely and actively interested in any type of equipment that will help him sell those homes more quickly — and this is the air conditioning salesman's cue.

The salesman must remember that the contractor is not building the homes to live in himself. He is building them only for the purpose of selling them at a profit, and as quickly as possible.

Prospective new home buyers are among the very best prospects the air conditioning salesman has, but for the most part they have to be reached through the contractors who are building the homes.

Operating on these basic principles, the firm of Strange and Lagos, a Los Angeles, Calif., organization serving as manufacturer's agents, engineers, and consultants in the refrigeration and air conditioning field, already has sold year-round air conditioning equipment to the developers of three sizeable real estate tracts, and has several more "hot" prospects on the fire.

"We realize that these new home developments constitute a big market for air conditioning equipment," says Hugh Strange, "which will repay us well for all our efforts to promote it. But before he tackles this kind of selling, there are certain factors which the air conditioning salesman must recognize.

"Surely the new home buyer, as the one who is going to live in the house, is directly interested in the health

and comfort benefits which air conditioning offers. But before he can be told this story, the idea of air conditioning must first be sold to the builder.

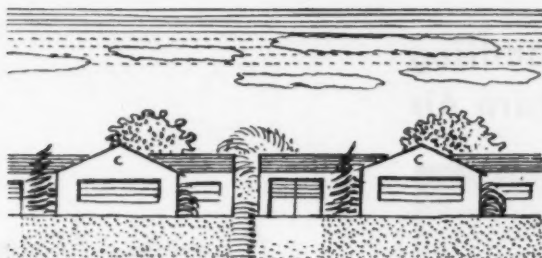
"This builder, to whom the house is merely a commodity to be merchandised at a profit, is understandably not so concerned with the health and comfort aspects. He is primarily concerned with the answer to only one question: Will air conditioning help to sell his houses faster? It is up to the air conditioning salesman to convincingly demonstrate to the builder that the answer to this question is an emphatic 'Yes!'.

"We have found considerable interest in residential air conditioning among the various contractors building tract homes either with F.H.A., V.A., or private financing," Strange declares. "Most of these contractors, however, are not too familiar with air conditioning, except from the heating side

"They ask about the cost of the equipment necessary for the cooling cycle, and the cost of operation. They also inquire as to what changes in construction are necessary in order to install the cooling cycle. Many of them are afraid that the added cost of year-round air conditioning will slow the sales of the houses they propose to build.

"The air conditioning salesman must know the answers to all of these questions.

"The builder must be made to realize that the added cost of the cooling cycle is relatively small when it is



added to the monthly payments of the home over the entire period of the mortgage. This can only be done, however, when the equipment is actually included in the price of the home, and is not offered on an optional basis. If it is offered as optional equipment, under F.H.A. or V.A. terms the payment time is limited to three years, and in many cases this will increase the monthly payments for the first three years beyond the amount that the prospective purchaser can afford.

"So, again, the logical approach is to sell the contractor and see to it that he includes the cost of the cooling cycle in his overall estimate and selling price.

"To do this, the air conditioning salesman must know the conditions and advantages that the cooling cycle offers to the purchaser of a new home. He must be able to state these advantages in such a manner that the contractor will see that it is to his advantage to install year-round air conditioning, because by so doing he will be better able to sell the homes he is building.

Comfort Is an Important Sales Factor

"Comfort is a very important factor in the purchasing of a new home. This has been proven by the fact that it would be impossible, or next to it, to sell a home without some sort of a heating system.

"People buy homes with several things in mind, such as location, size, design, and price. No matter how much he liked any of these factors, however, the average buyer would not purchase a home that did not have some provision for heating. He would realize that without heating the home would be uncomfortable.

"True, a heating system could be added later, but the expense of doing this, plus the fact that the installation probably would not be as satisfactory as if it had been made at the time of construction, would serve as a definite deterrent to the sale.

"Now, it's just plain common sense that if heating is so important to the ultimate purchaser of a home, cooling is important too. The degree of this importance, admittedly, will vary with the geographical location of the home, especially insofar as the smaller and less expensive homes are concerned.

"Obviously, in those locations where the summer temperatures run above 90 F, there is no question about the fact that the cooling cycle is important and that the home buyer will purchase a home with a year-round system if it is offered to him in the right way.

"To sell successfully at the level of the building contractor, the air conditioning salesman should get on the job at the time that the sub-division is being laid out. He should secure a set of plans of the homes to be

erected, and should make a layout for the architect and contractor which includes year-round air conditioning.

"He should plan the air distribution system so that it is satisfactory for cooling as well as heating. He should specify the electrical service required and provide for a cooling tower, if necessary. His drawings should be approved and stamped by a competent registered professional engineer.

"When he has completed his plans he should submit them to the builder immediately, so that the year-round system can be included in the final estimate. With this information (drawings and estimates) the contractor building the homes can lay the whole matter before the F.H.A. or V.A. authorities and his bank for their approval and financial commitment.

Sell the Buyer Through the Seller

"Once the installation actually begins, the air conditioning salesman should contact the agent selling the homes. He should instruct him in the operation of the equipment and inform him as to what it is designed to do. He should sell him on the sales value of a year-round conditioning system and furnish him with sales literature covering the type of equipment installed.

"He should be sure that the sales agent for the homes is thoroughly aware of all the advantages and benefits which year-round air conditioning offers to the prospective home owner. He should firmly impress upon him the fact that: the cooling cycle will provide comfort in the home during hot weather; that this comfort will be further enhanced by the control of humidity; that the home will be cleaner because of filtered air, and that furnishings and drapes will look better and last longer; that people who suffer from asthma, hay fever, and other respiratory troubles will obtain substantial relief from living in a pollen-free atmosphere.

Old, Old Story Needs Re-telling

"All this, of course, is an old, old story to the air conditioning salesman. In fact, being so familiar with it himself it is easy for him to overlook the fact that neither the agent selling the homes nor the prospective purchaser is so well acquainted with the advantages of year-round air conditioning. So the story must be told over and over again.

"This may seem like a lot of work to do after the order already has been secured, but the importance of this type of contact cannot be over-emphasized," Strange warns. The sales agent for the air conditioned homes must be just as thoroughly informed on the advantages of the cooling cycle as he is on those of the heating side, so that he can add this ammunition to his sales presentation, and thus sell the homes more quickly than they could be moved without cooling.

"The all-important thing to remember," Strange concludes, "is that the contractor will be building more homes after this one tract is sold out. This offers a golden opportunity for repeat business — but he won't be installing cooling equipment in any of his future homes if sales of his first air-conditioned development are slow."

4 Methods of Handling Supply and Return Air

FIG. 1

High wall supply with opposite base return.

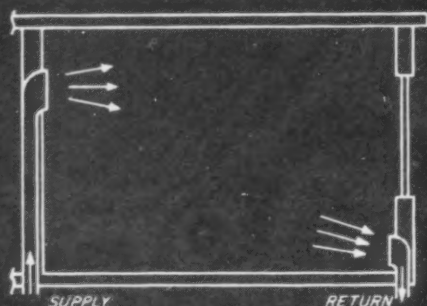


FIG. 2

Supply and return outlets located in same wall.

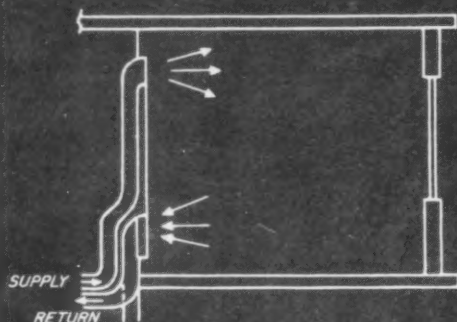


FIG. 3

Combination supply and return grille in wall.

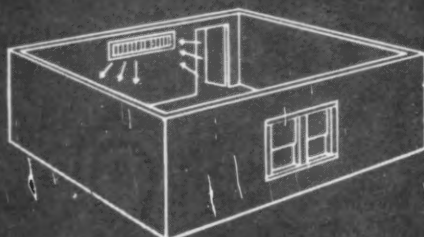
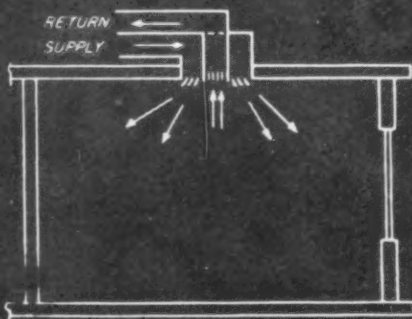


FIG. 4

Ceiling diffuser combining supply and return.



A practical GRILLES,

by Edward Dowis

GOOD air conditioning includes well planned air flow in all occupied spaces. Since there are no hard and fast rules governing such planning, it requires a practical application of the known laws of aerodynamics.

A good fan and duct system will deliver the correct amount of air to each room for proper conditioning, but distribution within the room is the function of the supply and return openings and the discharge equipment installed at these openings. Improper selection or location of grilles or diffusers may result in objectionable drafts, uncomfortably hot or cold spots, noise or stuffiness due to insufficient air movement.

When air leaves a supply opening, it immediately entrains some of the air in the room and the mixture is carried by inertia for a distance determined largely by the velocity and pressure at which it leaves the opening. The direction can be controlled by louvers or other deflectors, permitting the location of openings at places which would otherwise be unsatisfactory.

It is important that supply and room air be well mixed before coming into contact with occupants. This is accomplished generally by locating supply openings high enough above floor level or directing the flow to permit time for mixing.

Floor and baseboard grilles have been extensively used in heating installations and are generally satis-

guide to the selection and location of REGISTERS AND DIFFUSERS

factory, due to the natural tendency of warm air to rise. As it gives up heat to the ceiling or exposed walls, the air cools and returns to the floor, setting up circulation by convection.

These locations are not desirable for chilled air supply and where they must be used, as in the case of existing outlets of converted heating systems, the air must be directed vertically and away from occupants at as high a velocity as practicable. Wherever possible, the ducts should be extended and grilles placed in the upper walls.

The upper wall location is well suited to both cooling and heating. The air throw is usually toward the exposed wall, and the grille should be selected to provide throw about $\frac{3}{4}$ the distance across the room. Manufacturers' catalogs often recommend grilles giving throw the full distance to the exposed wall.

Since, for a given cfm quantity, smaller grilles give higher velocity than larger ones, it is easy to correct under-throw by blanking off part of the opening. Over-throw can not be so easily corrected. It is wise therefore, to select grilles large enough so that a blow not exceeding $\frac{3}{4}$ the distance to the opposite wall will be possible. This will preclude the possibility of over-throw caused by selecting grilles too small.

The throw of a grille, in feet, can be determined from the cfm of air which it is to handle and the effective area of the grille. Effective area is less than the core area but, for a

given line of grilles, may bear a definite ratio to core area. Effective area of a grille is also affected by adjustment of the deflecting vanes.

In order to apply a formula to determine throw, it is necessary to have a constant, determined by experiment, to apply for each adjustment. The throw in feet can be found by multiplying the cfm by the constant and dividing by the square root of the area or, expressed algebraically,

$$\text{Throw} = \frac{\text{Constant} \times \text{cfm}}{\sqrt{\text{Area}}}$$

Where the ratio of core to effective area is constant, core area can be used, provided the constant is determined from core area.

Table 1 shows the area of grille which practice has shown suitable for various air quantities and room

widths. This is based on a $\frac{3}{4}$ throw and is applicable to standard makes of grilles with deflecting vanes. The areas are gross list sizes; thus, for a 240-sq. in. area, either a 30 x 8, 24 x 10, or 20 x 12 list size may be used.

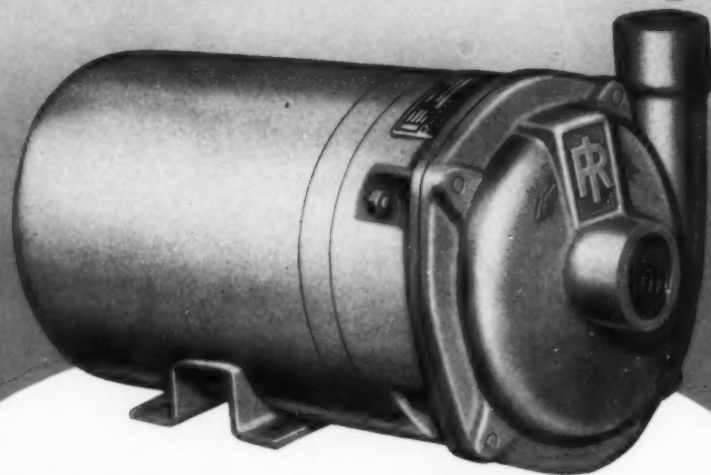
Grilles should be located, where possible, at least a foot below the ceiling in order to minimize the streaking of painted ceilings by dirt in the air stream and to permit better mixing with room air. Location of return grilles is not so important to air distribution as that of supply openings, and one return may be used to handle the air from several supply grilles or even more than one room.

It is best, however, to place at least one return in each room to permit proper operation when doors

TABLE 1: Approximate Grille Area in Square Inches

C.F.M.	SUPPLY Distance to opposite wall							RETURN
	10	15	20	25	30	35	40	
100	84							84
200	112	84						84
300		120	112					84
400		300	200	96	84			112
500		432	300	240	160	84		140
600			432	360	240	180	96	160
700				432	360	240	180	192
800					432	300	240	200
900						432	300	240
1000							360	240

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The most complete pump line
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1/3 to 1 hp



1/2 to 1 1/2 hp



1 to 7 1/2 hp



1 to 75 hp

This new Ingersoll-Rand Motorpump is truly conditioned for air conditioning work. Here is a pump with better hydraulic performance, a pump that is smaller and lighter in weight and just full of new features.

Built in 1/3, 1/2, 3/4 and 1 horsepower sizes this new Motorpump delivers the maximum with a minimum consumption of power. If you are currently in need of an air conditioning pump that will deliver up to 48 gallons per minute and reach heads up to 100 feet, then investigate Ingersoll-Rand's new Motorpump with:

- 1—Mechanical seal—rotating ceramic seal face against a stationary "Teepelite" seal face.
- 2—Positive impeller attachment (key and cap-screw)—not just an impeller screwed on the shaft.
- 3—A unique manner of rotating pump by hand to loosen seal and ring fits on spring start-up after winter shut-down.

Ingersoll-Rand now adds this unit to its famous Motorpump line that starts at 1/3 hp and goes to 75 hp. Deliveries range to 2800 gpm and heads to 650 feet.

Get in touch with your nearest I-R branch office today and build your business on satisfied customers—customers for whom you have installed an Ingersoll-Rand Motorpump.

Ingersoll-Rand

Cameron Pump Division

11 Broadway, New York 4, N. Y.

9-45

Circle No. 61 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

are closed. Openings, covered by grilles, are sometimes placed between rooms, but this may be objectionable because of noise or draft at the location of the openings.

Perhaps the most popular location for supply and return grilles is indicated in Fig. 1. The supply is placed opposite and blows toward the exposed wall. The return is placed in or near the base of the exposed wall. It must not be obstructed by drapes or furniture.

Conditions After Location

Another popular arrangement is as indicated in Fig. 2, with the supply in the high side wall opposite an exposed wall, and the return directly beneath. This will give a circulation path similar to that illustrated in Fig. 1.

Return grilles may be located near the ceiling and even adjacent to the supply grille, as indicated in Fig. 3, where cooling is the most important function of the system. The vanes must be adjusted to deflect the supply air away from the return to avoid short circuiting.

The high side wall location for returns has the disadvantage of permitting cold air to remain near the floor when heating. This location is very satisfactory for cooling and for heating when there are no exposed walls or where radiators carry part of the heating load. High wall location for return openings should be avoided when heating is a major consideration.

Consider Ceiling Outlets

Scientifically designed ceiling outlets, commonly called diffusers, are available for a wide variety of applications and should be given careful consideration in both original and remodeling installations.

Where there is attic or unoccupied space above conditioned rooms the duct installation may be simpler than for wall grilles. Since the air is admitted through the ceiling, it has ample time to be tempered by room air before reaching the occupied space. The air may be distributed uniformly in all directions through a properly installed diffuser.

A combination supply and return ceiling fitting is illustrated in Fig. 4. This has the same limita-

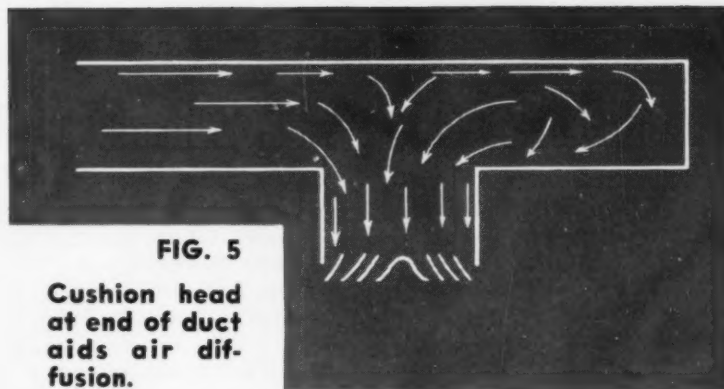


FIG. 5

Cushion head at end of duct aids air diffusion.

tions as the high wall combination grille and should be used for heating only in combination with other methods, such as radiators. Properly selected and installed, they have been very satisfactory in cooling systems.

Excessive return velocity tends to cause short circuiting of the supply air back to the return, impairing the efficiency of the outlet. Leakage between supply and return ducts should be prevented entirely.

When two or more ceiling outlets are required in a room, they should be spaced so that the distance between outlets is twice that between an end outlet and the wall.

The use of more than one diffuser is indicated when the length of a room exceeds the width by more than 50%. Otherwise, the blow sufficient to take care of the length would be excessive for width. With ceiling outlets, it is a decided advantage to have the return grille in the exposed wall.

The proper connection of grilles and diffusers to branch ducts and the use of dampers, deflecting vanes, and baffles is as important to proper performance as selection and location of the grilles themselves.

A cushion head, where a ceiling diffuser is connected at the end of a branch duct, will assist uniform distribution. This is an extension of the duct beyond the point of take-off, the length of this extension being equal to twice the diameter or more, as illustrated in Fig. 5.

Dampers suitable to the grilles should be chosen and located far enough from the grilles to prevent undue turbulence at the outlets. This usually is $1\frac{1}{2}$ to 2 diameters. Grids placed in collars leading to outlets

will assist in straightening the air stream.

The choice of grille type will depend upon the location. Return grilles usually have fixed vanes inclined downward toward the front to conceal the inside of the duct. Fixed supply grilles are suitable only when the angle of deflection can be predetermined, as they are not adjustable on the job. Single deflection grilles may have the bars running vertically or horizontally, and are adjustable to a limited degree.

Special Applications Cited

For general use, double deflection grilles with both horizontal and vertical bars adjustable give maximum flexibility.

A kitchen supply grille should be located so as not to entrain grease-laden air and vapors and deposit the dirt on the opposite wall. It should definitely not be placed directly over the range. Where an exhaust hood is installed over the range, or a fan installed anywhere in the kitchen, the supply opening should be located with that in mind.

In a bathroom, the air stream should not be directed over the tub or shower, and the velocity should be kept as low as possible in all parts of the room.

There is a difference of opinion regarding the advisability of installing returns in bathrooms and kitchens because of the odors which may be conveyed to the air stream. If a return is not provided for venting exhaust air. This may consist of a duct running to the attic or cellar, or to the outside, with a self-closing damper to prevent drafts.

Home, Industrial Markets Seen as Pacing Industry's "Growth Decade"

How does the future look for the fast-expanding air conditioning industry? In an analysis of over-all sales potentials, Cloud Wampler, president of Carrier Corp., predicts that:

By 1960, at the close of its greatest decade of growth, approximately one out of every five homes and apartments in the country will be equipped with complete or partial air conditioning...

The year-round air conditioning of homes will have become the largest single part of the entire business, with further sharp increases still to come...

The second biggest market will be installations in industrial plants to provide greater working efficiency in order to bring higher quality goods to the American public at lower prices.

Wampler noted that although year-round home air conditioning had made the most startling percentage sales gains during the past two years of any portion of the business, its vast possibilities have as yet barely been touched.

Home Market Tremendous

Here are total industry figures for the past few years in home sales of year-round and conversion units which provide complete heating and cooling. The table also shows annual retail dollar volume, plus estimates by Carrier for 1954 and 1960:

Year	Unit Sales	Volume
1952	15,000	\$ 20,100,000
1953	50,000	70,500,000
1954	100,000	139,500,000
1960	900,000	1,245,000,000

By 1960 year-round unit sales will have increased from 4% of total air conditioning retail volume in 1953 to nearly 30% of the industry's annual business, assuming reasonably favorable general business conditions. Continuing sharp increases of about 125,000 units a year and \$150 million annual sales can be expected after that time.

During the next seven years, 3 to 3 1/2 million homes will be equipped with year-round cooling and heating systems, Wampler estimates. As a

comparison and an indication of the vast potential still ahead at that time, some 19,000,000 single-family dwellings today have central heat.

Another important part of the market, room air conditioner sales, will continue to expand each year through 1960, he predicts, assuming fairly stable economic conditions. But by that year, the annual increase will have become considerably smaller than it is currently. Apartments and houses without a central heating system — of which there are now about 30,000,000 including many homes in the South — will continue to be an important selling area for room units, and a replacement market will also be developing by that time.

Below are industry sales figures of room air conditioners for the past few years with Carrier estimates for 1954 and 1960:

Year	Unit Sales	Volume
1951	237,500	\$ 85,500,000
1952	412,000	148,300,000

1953	900,000	324,000,000
1954	1,200,000	432,000,000
1960	2,300,000	828,000,000

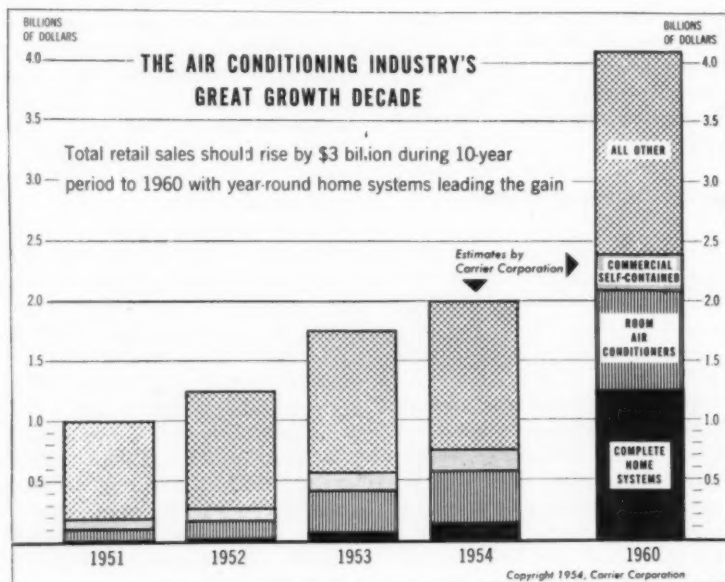
By 1960 the room unit portion of all air conditioning sales will have decreased slightly from the current rate to just under 20% of the total due to the greater expansion of other segments of the market. Its proportionate share of the market can be expected to decline even further after 1960 although annual dollar volume will continue to gain. About 7,000,000 homes will have been equipped with partial air conditioning through room units by the end of the decade, Wampler predicted.

An often overlooked part of the air conditioning industry's sales is self-contained equipment for commercial applications, such as stores, suites of offices and restaurants, and for small industrial installations, Wampler stated.

This self-contained business has shown a steady, substantial growth which is expected to continue, as indicated by the following industry figures and future estimates:

Year	Unit Sales	Volume
1951	40,000	\$ 80,000,000
1952	50,000	100,000,000
1953	75,000	150,000,000
1954	90,000	180,000,000
1960	150,000	300,000,000

Continued on page 96



HOME AIR CONDITIONING equipment will make up nearly one-third of the industry's sales by 1960, according to estimates by Carrier's marketing research department. As shown by the chart above, second largest sales category will be installations in industrial plants, with room air conditioners third. Total retail sales of all types and sizes of equipment during 1954 are predicted at double 1951 sales, and a further doubling of sales is anticipated during the next six years.

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(Advertisement)



REFRIGERATION COSTS REMAIN UNCHANGED FOR MANY YEARS

By Phillip D. Sang, Vice President
Goldenrod Ice Cream Co., Chicago, Ill.

"Over a period of 23 years we constructed seven ice cream hardening rooms, using cork insulation. In 1935, after consolidating production in one plant, we commissioned United Cork Companies to design and construct a new hardening room of the most modern type and efficiency. This was to maintain a temperature of -40° and called for 8000 sq. ft. of surface area.

"This room proved so successful that another room was built in 1945. So far as we can ascertain, the consumption of electricity for refrigerating these rooms is now no greater than when they were new.

"If called upon for further expansion, we would certainly again use corkboard insulation."

Integrated Responsibility

A major factor in the effectiveness of United BB Corkboard in this and thousands of other installations in meat, milk, frozen food plants and other applications requiring low-temperature insulation is to be found in the unified responsibilities of United Cork Companies . . . from selection of the grades of raw materials imported to the erection of the complete job.

Cork itself, of course, has unique natural insulation properties, and United Cork's patented process of block baking (BB) the cork granules into corkboard without the use of any binder makes most effective use of these natural advantages.

Each installation of United Cork BB Corkboard is planned by engineers thoroughly experienced in the requirements of refrigeration work. These engineers are located at each of United Cork's branch offices throughout the country. They are prepared to cooperate with architects and general contractors in designing low-temperature insulation as an integral part of the complete building.

United Cork Companies' erection crews, which are also located at each of the branch offices, then take the engineering blueprints and convert the designs into a finished insulation job. The branch office concerned also checks on the operating effectiveness of each installation to assure complete customer satisfaction.

If you would like to know more about the scope of United Cork Companies' service—and about the ways in which installations have stood up under the toughest conditions—just drop a line to United Cork Companies, Department I-8, Kearny, N. J.

Circle No. 64 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION

USEFUL LITERATURE On Air Conditioning

To obtain the information described below, simply circle on the postcard in this issue the key numbers of the items you wish to receive. We will forward your requests to the companies concerned.

THE RECENTLY INTRODUCED year-round packaged air conditioner for residential applications manufactured by Worthington Corp. is described in consumer language in a pocket-sized folder available from Worthington. Design and performance features are highlighted, detailing the single control and the gas or oil-fired unit's compressor.

Circle No. 111 on Reader Service Card

PANEL TYPE AIR DIFFUSERS for suspended acoustical ceilings are presented in bulletin K-36 by Connor Engineering Corp. The bulletin contains photographs of the panel diffusers as applied, being installed, installed with offset flexible ductwork and method of setting the damper. Dimensional drawings are included.

Circle No. 112 on Reader Service Card

A SCHEMATIC DRAWING of a completely installed automobile air conditioning system is included in a 4-page folder on the Wabash automobile air conditioner available from Wabash Mfg. Co. Completely describing how the unit works, and the market potential, the folder lists 48 step-by-step instructions for installation in a 1953-54 Chevrolet.

Circle No. 113 on Reader Service Card

HOW TO IMPROVE the engineering and installation of automatic electric controls for heating, ventilating and air conditioning is explained in bulletin F 5265-1 released by Barber-Colman Co. Giving complete information and specifications on electric "Control Centers", the bulletin also contains typical wiring diagrams.

Circle No. 114 on Reader Service Card

AN INSTALLATION AND SERVICE MANUAL and a specification sheet covering the line of Dearborn window-type room air conditioners are available from Dearborn Stove Co. The manual contains thorough step-by-step instructions on the installation procedure as well as operating and maintenance instructions. The catalog sheet contains complete specifications and a general description of the units.

Circle No. 115 on Reader Service Card

COOLING TOWERS for commercial, industrial and residential use are described in three bulletins released by Engineered Products Co. One bulletin covers "Econ-O" natural draft cooling towers; the second features residential units especially designed for home air conditioning; and the third bulletin describes the "Super Water-Saver" tower especially built for southern climates and southern loads.

Circle No. 116 on Reader Service Card

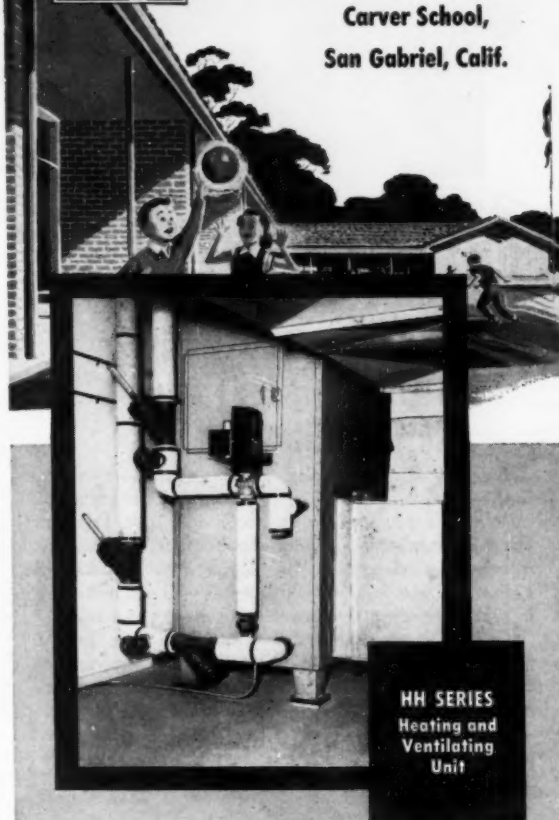
(More Air Conditioning Literature on page 78)

and AIR CONDITIONING • JULY, 1954

Again...It's Drayer-Hanson!

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Carver School,
San Gabriel, Calif.



HH SERIES
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Ventilating
Unit

In important installations everywhere...units like this are giving the dependable, long-lived service which keynotes Drayer-Hanson products.

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You can't mistake them! The extra features you find in HH's are solving tough air conditioning problems, the country over.



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FRICK COMPANY, Waynesboro, Penna.



Frick Unit Conditioner, located in a closet, cools two rooms in this motel restaurant. Note air diffusers built into ceiling. Return air is drawn into duct built into fireplace.



Circle No. 66 on Reader Service Card

AIR CONDITIONING LITERATURE...

Continued from page 77

AIR CONDITIONER COVERS are presented in a new catalog available from International Covers, Inc. Included in the catalog is information on sizes and construction features of air conditioner covers for every air conditioner on the market, including the 1954 models.

Circle No. 117 on Reader Service Card

COMPLETE ENGINEERING INFORMATION, including capacity curves and roughing-in dimensions on the lines of boiler water level controls and related boiler safety devices made by McDonnell & Miller, Inc. are contained in Catalog SC-5 released by the manufacturer. This 24-page catalog also contains parallel data on the different models arranged in tabular form for ready comparisons.

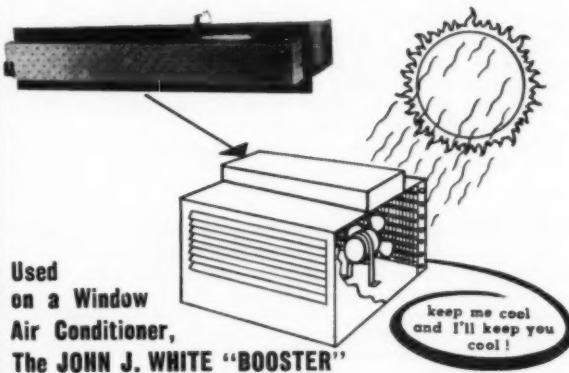
Circle No. 118 on Reader Service Card

RESIDENTIAL AIR CONDITIONING units and air conditioning coils are covered in a 4-page bulletin released by Refrigeration Economics Co. Bulletin R-53-2 contains dimensional drawings, tables of specifications, and features six different application drawings showing installation of the air conditioner with various types of heating units and ductwork.

Circle No. 119 on Reader Service Card

(Turn to page 99 for more Useful Literature)

Boost Your Window Cooler Profits With a "Booster"



- Maintains optimum water level in slinger pan automatically.
- Lowers head pressure.
- Lowers operating cost.
- Permits operation of unit above present outside design operating conditions.
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If Your Unit Is In A "Sun" Window, It Can Use A "Booster"

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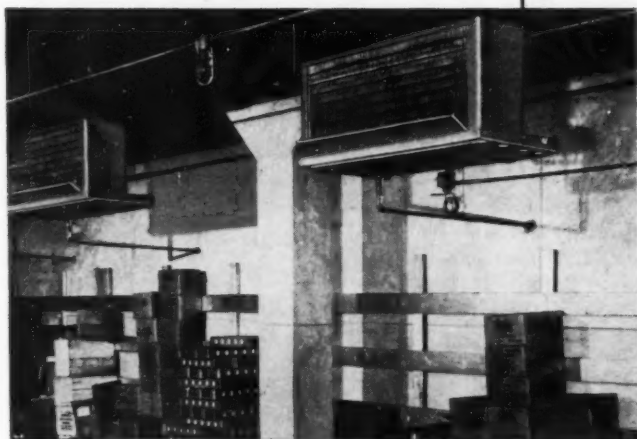
Newark, New Jersey

Circle No. 67 on Reader Service Card

JULY, 1954 • COMMERCIAL REFRIGERATION



YOU NEED STEADY HEAT TO MAINTAIN A 0° ROOM



and ONLY **BUSH THERM-O-CYCLE** **PROVIDES STEADY HEAT** on the **DEFROST CYCLE**

How completely it defrosts is the key to quality in any hot gas defrost system. Defrosting requires heat. And if the heat supply runs out before defrosting is complete, the room temperature will not be properly maintained.

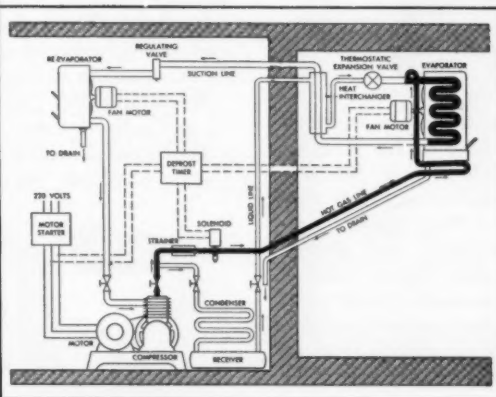
With BUSH Therm-O-Cycle, the heat supply **can't** run out . . . because **room air** passed over a re-evaporator coil furnishes the heat required.

Since it utilizes **room air**, this special Therm-O-Cycle re-evaporator provides an **unlimited** amount of heat . . . yet requires no storage reservoirs, re-boilers or other complicated devices.

BUSH Therm-O-Cycle . . . the **modern** hot gas defrost system. Fully automatic in operation, it is the **one** system with an **unlimited** heat source to assure **complete** defrosting . . . with a minimum rise in box temperature.

All Therm-O-Cycle components are designed for easy installation . . . convenience in servicing.

Write **TODAY** for free descriptive bulletin.



BUSH MANUFACTURING COMPANY
WEST HARTFORD 10, CONNECTICUT

WHAT'S NEW...

in Air Conditioning Equipment

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

(For more NEW PRODUCTS turn to page 101)

Relief Valve

Product: No. 103 relief valve.

Manufacturer: Taco Heaters, Inc., Providence, R. I.

Features: Suitable for about 80% of all hot water heating in-



stallations, valve has been tested and approved for a discharge capacity of 326,000 Btu at 30 psi. Bronze body and dome. High temperature non-sticking silicone rubber disc. Stainless steel spring. Nylon reinforced "Hycar" rubber diaphragm. Renewable bronze seat. Valve has been re-styled by an industrial designing firm to improve appearance.

Circle No. 141 on Reader Service Card

Room Cooler Line

Product: Six models of room air conditioners.

Manufacturer: Westinghouse Electric Corp., Chicago, Ill.

Features: Units range from 1/2 to 1 1/2-hp. Concealed push-button controls on 3 deluxe models provide

choice of 10 comfort zones while dial type controls on 3 special models have 6 settings. All are equipped with draft-free grilles individually adjustable to direct flow of conditioned air up, down, etc. Heating elements are built into 3/4 and 1-hp deluxe models, thermostats are standard equipment on all deluxe models. All models have concealed controls easily accessible beneath cabinet lid. Units contain Fiberglas filter. Units will cool rooms in a range of from 340 to 1000 sq.ft. of floor area.

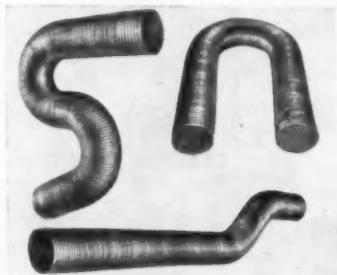
Circle No. 142 on Reader Service Card

Branch Ducting

Product: "Thermaflex A" branch ducting for high and low pressure air conditioning systems.

Manufacturer: Flexible Tubing Corp., Guilford, Conn.

Features: Flexible, lightweight ducting combines low air friction



loss with ease of installation. Construction is a continuous galvanized spring steel helix covered with a permanently bonded 3-ply laminate of Fiberglas fabric sandwiched between 2 layers of aluminum sheet-

ing. The aluminum is bonded to the Fiberglas with specially developed resinous elastomeric compound which also binds the aluminum to the wire helix. Available in 12' lengths and in diameters of 2 to 10". Ducting is flame proof and will withstand hydrostatic pressure of 59 psi. Will function within temperature range of from 0 to 250 F.

Circle No. 143 on Reader Service Card

Timing Device

Product: Series 3700 time switch for automatic control of window air conditioning units.

Manufacturer: Paragon Electric Co., Two Rivers, Wis.



Features: Seven-day dial allows for different settings for each day as well as Sunday and holiday cut-out. Switch can also be manually operated without disturbing sequence of automatic operation. Two simple dials, which can be re-adjusted at any time, control on-off

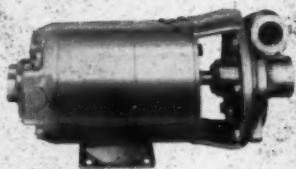
LOOK TO THE LEADER—LOOK TO PEERLESS

For America's most Complete Line of **END-SUCTION TRANSFER PUMPS**

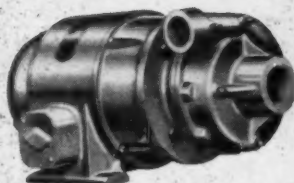
**A TYPE, MODEL
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**FACE
MOUNT
AND
DIRECT
CONNECTED
TYPES**

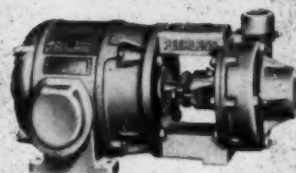
1/4-1 hp FACEMOUNT



2, 3, 5 hp FACEMOUNT

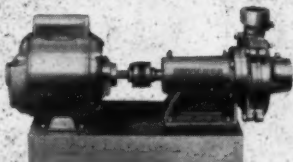


5-50 hp DIRECT CONNECTED

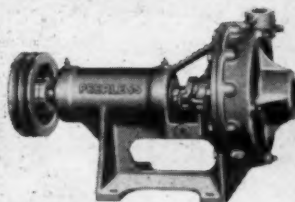


FLEXIBLE-COUPLED FRACTIONAL HP

**FLEXIBLE
COUPLED
TYPES**



FLEXIBLE-COUPLED INTEGRAL HP

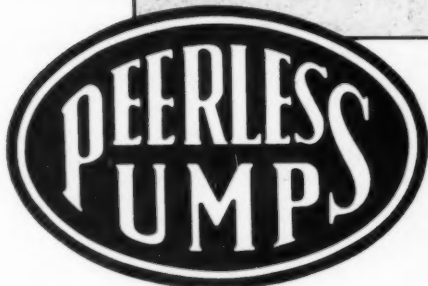


CHARACTERISTICS

HEADS: Up to 260 ft.

CAPACITIES: 5 to 5500 gpm

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| THOUSANDS SOLD FOR: | (4) COMMERCIAL AND |
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- 2—Mechanical Shaft Seal
(Leak Proof)
In Models up to 5 hp Type PE
In Models up to 1 1/2 hp Type PB
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(Same as used in Largest, Highest
Quality Industrial Pumps)
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FOOD MACHINERY AND CHEMICAL CORPORATION
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schedule. The "on" time is adjustable on a 24-hour dial with 15-minute periods. The "off" time is set on the 7-day dial and can be set to shut off the room cooler at a different time each day. Each tripper moves in self-retaining slots. For use with units up to 1-ton capacity, timer is designed to use existing cord set for easy installation. Circle No. 144 on Reader Service Card

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Here's why I insist on YORK oil:*

- ☐ York Oils aren't the lowest in price -- but they're definitely the most economical in terms of performance per dollar of oil cost!
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- ☐ York Oils are immediately available from my York Authorized Jobber. He knows his business and he values mine. You'll like the way he does business with you, too! Call your York Authorized Jobber -- now, while you're thinking about it!

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YORK CORPORATION



YORK, PENNSYLVANIA

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

Circle No. 70 on Reader Service Card

Year-Round Conditioners

Product: Year-round residential air conditioning units.

Manufacturer: York Corp., York, Pa.

Features: Completely packaged units are available in 2 and 3-ton cooling capacities. Heating side of the unit is either an oil or gas-fired furnace. Cooling side is completely hermetically sealed circuit. The 2-ton unit will handle heating and cooling for the average 5-6 room house. Occupying only 6.65 sq.ft.

of floor space, unit, including the heating component, is only 63" high, 36½" wide, and 26" deep. Oil-fired heater designed to operate on any kind of domestic heating oil. Any type fuel gas will efficiently burn in the (illustrated) gas-fired units. Both heaters contain latest

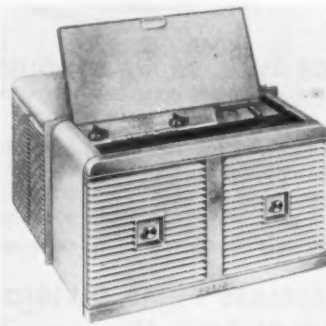


safety devices. The 2-hp gas and oil-fired units deliver 80,000 and 34,000 Btu output at the bonnet, adequate heat for the average home. Air flow dampers operate electrically, saving owner any effort in changing indoor climate. Both heating and cooling units accessible from the front. Cooling unit slides out of cabinet on a drawer-like carriage, as does entire set of electrical connections and controls.

Circle No. 145 on Reader Service Card

Room Cooler Line

Product: Nine models of room coolers, both window and console styles.



Manufacturer: RCA Victor, Div. of Radio Corp. of America, Camden, N. J.

Features: Conditioners contain permanent filters, night lights, built-

in thermostats, push-button controls, optional heating facilities. Available in sizes from $\frac{1}{3}$ to $1\frac{1}{2}$ -hp. Strip heating facilities are standard on all console units. Model 50 deluxe (illustrated) has capacity of 6050 Btu/hr for rooms up to 325 sq.ft.

Circle No. 146 on Reader Service Card

Current Tester

Product: Model 102 Haco load tester.

Manufacturer: Heights Air Conditioning Co., Cleveland, Ohio.

Features: Use of the tester enables determining, without first installing the air conditioner, the exact operating voltage that would



be existent if the conditioner were installed. Predetermines the voltage drop on the particular circuit that would be used for operation of the unit. Designed especially for use with $\frac{1}{3}$, $\frac{1}{2}$, and $\frac{3}{4}$ -hp conditioners in the 115 volt range. Constructed of 18-gage steel, unit is 6 x 9 $\frac{1}{2}$ x 4". Furnished with a 4 $\frac{1}{2}$ ' cord and plug.

Circle No. 147 on Reader Service Card

Luminous Ceilings

Product: "Acusti-Luminus" ceiling construction which permits air conditioning without use of duct work.

Manufacturer: Luminous Ceilings, Inc., Chicago, Ill.

Features: Ceiling diffuses illumination over the entire ceiling area, giving uniform distribution, while acoustical baffles reduce the noise level. Ceiling suspended beneath rows of fluorescent lights, at varying depths below the true ceiling. Area between true ceiling and Luminous Ceiling can be used as an extended plenum for air condi-

tioning and warm air heating. Duct work is eliminated. This method provides low velocity air distribution. Openings through which the air enters the room below are identical throughout the area, providing unequalled distribution without the use of grilles or diffusers. Plenum can be divided and special openings as well as closer spacings can be provided for special needs. Ease of installation and maintenance are other features. Ceilings are UL approved.

Circle No. 148 on Reader Service Card

Hi-Boy Conditioners

Product: Model US-CH "Capitolaire" self-contained hi-boy air conditioners.

Manufacturer: United States Radiator Corp., Detroit, Mich.

Features: Available in five sizes: 2, 3, 5, 7 $\frac{1}{2}$, 10 and 15-tons. Unit automatically controlled by built-in thermostat. Reversible plenum chamber can be removed for duct-type installations. Standard units available with Copeland or Servel semi-hermetically sealed compressors. Shell and coil condenser pro-

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Pittsburgh 26, Pennsylvania



Circle No. 71 on Reader Service Card

vides counter-flow of water and refrigerant. Condenser constructed of Wolverine low fin copper tubing. Cooling coil is $\frac{5}{8}$ " o.d. copper tubing and aluminum fins. All coils have 7 fins per inch, are equipped with multi-outlet type thermal expansion valve. Steam or hot water heating coil available as an accessory. Throw-away filters 1" thick, can be easily replaced. Normal cfm ranges from 800 to 6000, cooling ranges from 24,000 to 180,000 Btu/hr.

Circle No. 149 on Reader Service Card

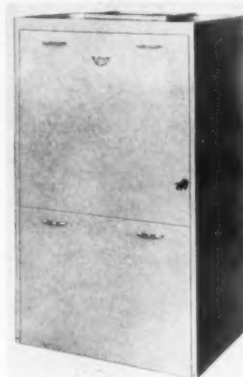
Summer Cooler Line

Product: Models 2-SAC and 3-SAC summer air conditioning units.

Manufacturer: Utility Appliance Corp., Los Angeles, Calif.

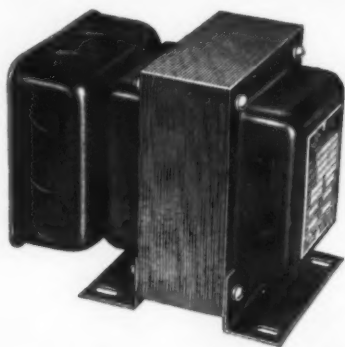
Features: Exclusive "floating chassis" design eliminates annoying metal knocking of other conditioners. Designed as companion units to the line of Utility forced air furnaces, units can be used also with other makes of furnaces. Can be operated independently, with no connections to a heating system.

Units are of 2 and 3-ton capacities, respectively. Isolation of refrigeration unit and blower from the cabinet with resilient rubber mounts results in stopping noisy vibration.



Blower and refrigeration units can be easily removed for servicing. Double thickness insulation, 2 large self-contained air filters, rust-proof condenser pan and dynamically balanced blower which operates at a low speed are other features.

Circle No. 150 on Reader Service Card



IS A

BOOST AND BUCK TRANSFORMER FOR AIR CONDITIONING APPLICATIONS

As a quick and economical method of supplying normal voltage (220, 230 or 240 volts) single phase from available under voltage circuits (197, 208 or 214 volts) this series of transformers will solve many application problems. For example, the installation of air conditioning equipment in an office or commercial building, where only lighting circuit voltage is available may require the installation of a separate circuit connected from two legs of a power line; such connection providing 208 volts single phase. This 208 voltage, not being sufficient to develop full starting torque of the 230 volt single phase motor, may cause the motor to operate constantly on starting windings and this would result in overheating and possible burn out.

The Boost and Buck series of transformers are essentially 4 winding insulated transformers in which the separate windings are interconnected so as to provide the same voltage tapping characteristics as an auto transformer. In effect the secondary winding voltage is added to the input voltage thus boosting the output 5% or 10% as desired. In addition the load capacity of the transformer is compounded in relation to its multiplied output voltage.

WRITE FOR CATALOG BB-199

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827 WATER STREET

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West Coast Engineering Laboratories: 1375 West Jefferson Blvd., Los Angeles, Calif.
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Acme  **Electric**
TRANSFORMERS

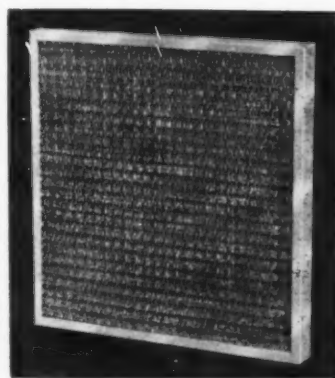
Circle No. 72 on Reader Service Card

Aluminum Air Filter

Product: All-aluminum lifetime air filter.

Manufacturer: George Evans Corp., Moline, Ill.

Features: Made for commercial, residential and industrial cool-



ing and heating applications. Entire filter precision made. The 20 x 20 x 2" size filter contains 76,060 precision-made openings which have a surface over which air is forced of 1.24 miles. Holds up to 200% more dust than competitive filters with less than half the peak air flow

Now from

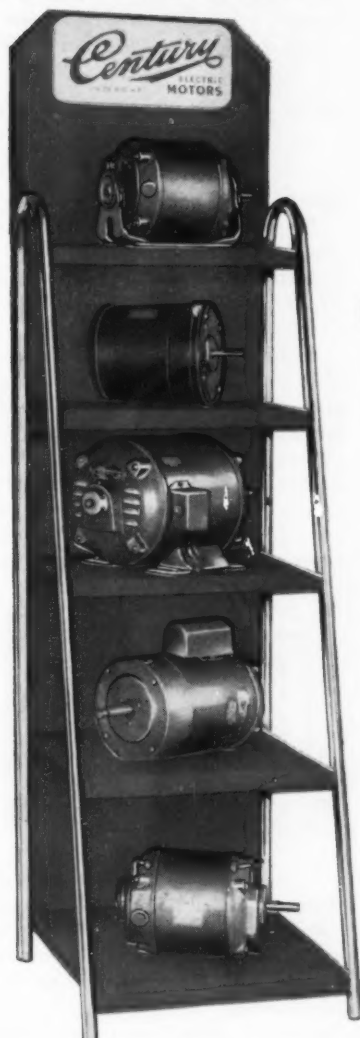


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TWO EASY WAYS TO GET YOUR SHARE OF PROFITABLE MOTOR REPLACEMENT BUSINESS

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WITH THIS

Century Silent Salesman



Take advantage of the BIG, constantly growing demand for replacement motors with these and other motors from the Century Line.

1 MAINTAIN YOUR OWN MODEST STOCK OF Century MOTORS FOR RESALE

- Most often, when folks need a replacement motor, they need it QUICK. You can fill that need—and gain their loyalty—by selling them top quality motors from Century's Complete Line.
- A stock of Century Motors prepares you for profitable replacement business with most makes of compressors, oil burners, blowers, unit heaters, pumps, fans, appliances, and scores of other motor-driven products.
- Free, with your order for only ten Century Motors, you get the attractive red and chrome metal display stand shown here. It identifies you as the man to see for replacement motors. You'll show more motors, sell more motors with this display, in just a few square feet of space. Limit of one display stand per customer.

2 WORK CLOSELY WITH YOUR COOPERATIVE Century SERVICE STATION

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**GET ALL THE DETAILS
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837

CENTURY ELECTRIC COMPANY

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I want all the facts about Century's motor replacement selling plan.

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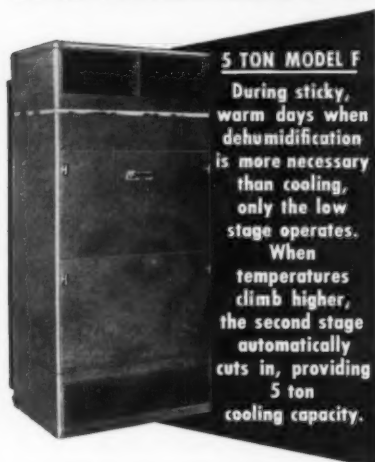
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SELL 2 STAGE ECONOMY AND PERFORMANCE

WITH

Janitrol
AIR CONDITIONING



5 TON MODEL F
During sticky, warm days when dehumidification is more necessary than cooling, only the low stage operates. When temperatures climb higher, the second stage automatically cuts in, providing 5 ton cooling capacity.

OTHER SALES FEATURES, TOO!

Designed especially for commercial installations, Janitrol cooling units feature a completely isolated one piece chassis with a complete inner lining of thermal and acoustical insulation under the smart grey casing for unusual quietness. Here's equipment you can install with confidence, requiring a minimum of servicing. The hermetically sealed refrigerating unit carries a 5 year warranty. A 2 and 3 ton unit are included in the Janitrol line.



Write about Janitrol Sales Opportunities in your area.

Janitrol
HEATING AND AIR-CONDITIONING
DIVISION

SURFACE COMBUSTION CORPORATION
COLUMBUS 16, OHIO
IN CANADA: ALVAR SIMPSON LTD., TORONTO 13

Circle No. 74 on Reader Service Card

resistance. Precision angled openings set up higher turbulence within the filter, cause air to travel over 3.5 times the width of the filter from inlet to outlet side. Filter pack is exactly machine stamped to have rough burred edges which grip and hold dirt. Filter pack is made with larger openings on the inlet side and progressively smaller openings on the outlet side. Filters may be anodized for corrosion resistance.

Circle No. 151 on Reader Service Card

Conditioner Protector

Product: "Weather-Ban" metal protective cover for window air conditioning units.

Manufacturer: Weather-Ban Products, Inc., New Brunswick, N.J.

Features: Designed to fit most models of window air conditioners, protector is made of 26-gage "Galvaneel". Furnished in any of 4 colors of baked enamel finish. Greatly decreases effects of sun on outer casing of window units through use of Fiberglas insulation

installed under main portion of the cover. Reduction of heat on outside of the conditioner decreases heat normally transmitted to motor and compressor, resulting in in-



creased efficiency and lowering of units running time. Colors were chosen to blend with units and most home's outside decorative scheme. Cover is pitched to shed rain, snow, sleet, etc.

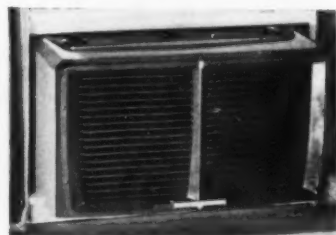
Circle No. 152 on Reader Service Card

Room Cooler Line

Product: "Crosley" room air conditioners in 10 models.

Manufacturer: Appliance & Electronics Div., Avco Mfg. Corp., Cincinnati, Ohio.

Features: Two models are available with reverse cycle heat pump and "Climate Timer" which automatically limits hours and days of operation to those when the room is in use. Timer is also available as an accessory on the complete line. Unit is composed of a 24-hour timer which can be set to turn the



air conditioner on or off at selected times. A second timer with seven cams representing days of the week can be set so the conditioner will automatically operate only on the selected days. The line includes two 1-ton units, five 3/4-ton units, two 1/2-ton units and a 1/3-ton model. A thermostat regulates operation of the air conditioners: if the weather is too cool, the conditioner remains "off"; if the room temperature is

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The
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Unmatched for Efficiency

Here is today's outstanding refrigeration value. The Peerless Pie Plate Coil Unit delivers maximum efficiency because it utilizes *all* of the cooling surface. Its compact design permits it to fit into less space.

The power-packed round coil of improved evaporator design is ideally suited for use in soda fountains, direct draw bars, reach-in refrigerators and similar cooling applications. It has all-aluminum casing and brackets; aluminum fin surface on copper tubing; oilless fan motor. Available in three sizes, with or without drain pan. Write for detailed information.

Peerless of America, Inc.

1501 No. Magnolia Avenue
Chicago 22, Illinois, U.S.A.

Circle No. 102 on Reader Service Card

below thermostat setting, the conditioner will operate on the reverse cycle and heat the room. Timer can be pre-set to turn on automatically shortly before an office opens and to shut itself off at quitting time. It will skip week-ends and any other designated days.

Circle No. 153 on Reader Service Card

Time Switches

Product: Two models of a 24-hour time switch.

Manufacturer: Zenith Electric Co., Chicago, Ill.



Features: Switches provide easy adjustment for complete 24-hour schedules by simply sliding the self-contained, non-removable trip levers in or out on a dial scaled in 15-minute graduations. As many as 48 "on" and 48 "off" operations can be automatically repeated for every 24-hour period. Enables intermittent daily operations with night shutdown. One model available with calendar device to cut out non-working days, other model has standard equipment. Both models are powered by heavy duty, self-starting, self-lubricating, synchronous industrial motor. Capacity 1000 watts, 60 cycles a-c. Dimensions are 8½" high, 6½" wide, 4½" deep.

Circle No. 154 on Reader Service Card

Interior Door

Product: "Amweld" air conditioning door developed for centrally air conditioned and perimeter heated homes.

Manufacturer: American Welding & Mfg. Co., Warren, Ohio.

Features: Flush 1¾" steel interior door designed to allow proper air flow between connecting rooms as required by central air conditioning installations. Permits closed door privacy without impairing or disturbing heat balance of the system. Eliminates need for return air ducts. Available in range of standard door sizes with an attractive factory-installed grille. Roll formed of 18-gage steel, reinforcements are

welded in place. Emulsion-type coating applied to inside of the panels, bonded permanently to the metal provides sound deadening qualities.

Circle No. 155 on Reader Service Card

Home Conditioner

Product: Residential air conditioner for addition to forced air heating systems.

Manufacturer: Silco Products, Inc., Minneapolis, Minn.

**NO CYLINDERS—
NO DEPOSIT**

With
"FREON-12"
95 100 lb. Net

"FREON-114"
1 lb. Net

**SULFUR
DIOXIDE**
1 lb. Net

24 cans to the box
Packed in cartons of 6

USE IT — and throw away Container!

Charg-A-Can

PACKAGED REFRIGERANT

You'll save time and money with Eston's **Charg-A-Can** disposable refrigerant containers. Convenient to carry. Safe and easy to use. **Charg-A-Can** units are filled under carefully controlled conditions, with all material expertly analyzed for purity. Available with "Freon-12" in 95/100 pound net contents. "Freon-114" in one pound net contents and Sulfur Dioxide in one pound net contents. **Charg-A-Can** is the practical, economical answer to your refrigerant needs.

DISPENSER VALVE—Pictured (below) is the new improved dispenser valve for use with **CHARG-A-CAN**. Acts as valve, puncturing device and connector for the **CHARG-A-CAN**. Allows you to withdraw part or all of contents by desired valve operation. Can be re-used for many hundreds of charges.



Now available in attractive, new 6-can Handi-Pack containers for ease in handling, stocking and display.

Call Your Local Eston Wholesaler—Or Secure His Name From

ESTON CHEMICALS DIVISION

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Circle No. 75 on Reader Service Card

YOU BENEFIT 4 WAYS

1. Elimination of Cylinders
2. Economical—No Waste
3. Factory Control of Purity
4. Usable in Accurate Amounts





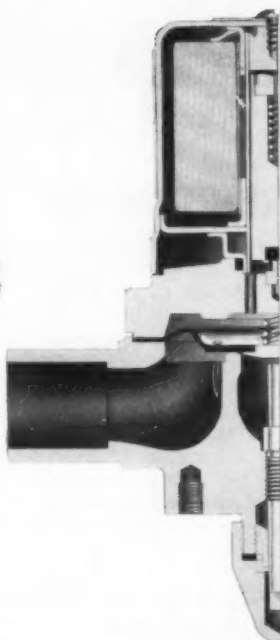
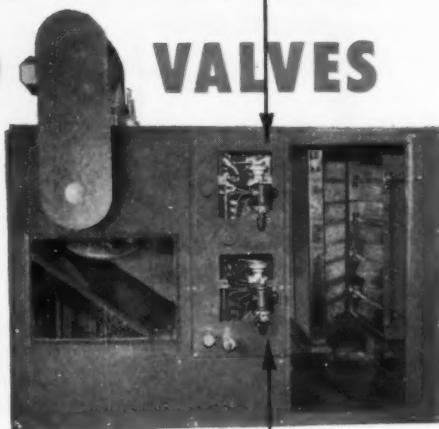
Photo Courtesy The Budd Company



**To help assure continuous passenger comfort
THE TRANE COMPANY uses
SOLENOID VALVES**



**in Air Conditioning
Santa Fe Dome Cars
and Coaches**



One of the toughest of all air conditioning installations is that of railroad passenger cars, and THE TRANE COMPANY selected Jackes-Evans Solenoid Valves for the cars on the famous Santa Fe "El Capitan" and other trains. They are helping to insure satisfactory operation of the improved TRANE air conditioning units.

J-E Solenoid Valves are particularly well suited to mobile equipment for they are not affected by motion, vibration, or angle of installation. This is due to the spring loaded plunger closing the pilot port and the diaphragm spring. In addition, their greater opening power assured the Santa Fe that these valves would open under the most adverse conditions where the condenser coil is located directly over the road bed that becomes excessively hot on the western desert.

The amazingly simple design of J-E Solenoid Valves—only two moving parts—rugged construction and advanced engineering assure completely dependable performance under the toughest conditions. For complete information on how J-E Solenoid Valves can save you time, money and trouble in controlling Freon, brine, ammonia, steam, water, air and gas, call your wholesaler or write.

**All J-E Solenoid Valves are
unconditionally guaranteed
for 18 months**

- **TIGHT SEATING**—no bubble tolerance.
- **SIMPLICITY**—only two moving parts.
- **LONG LIFE**—cool coils.
- **DURABILITY**—all corrosion-resistant material.
- **OPENING PRESSURE DIFFERENTIAL**—higher than most others on the market.

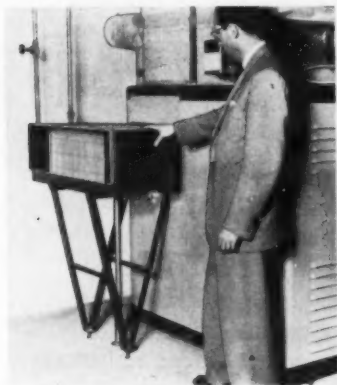


**SOLENOID VALVES THAT SURPASS THEIR SPECIFICATIONS
JACKES-EVANS MANUFACTURING COMPANY**
Controls Division: 4427 Geraldine Avenue • St. Louis 15, Missouri

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JULY, 1954 • COMMERCIAL REFRIGERATION

Features: Low unit cost and low installation charges permit total installation bill to be under cost of some window air conditioners. Wherever cold running water of 60 F or less is available Silco unit can be installed to convert entire system into a cooling plant. No alteration of present system neces-

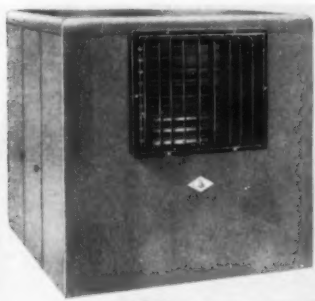


sary. Unit is permanently installed on the furnace and connected to the cold water supply. In gravity-type heating systems, installation of a fan and motor is necessary. Made in 10 sizes to accommodate any size home. Thermostatic controls may be added to the unit at additional cost. Can be connected with a mechanical refrigeration unit for installations where no water is available.

Circle No. 156 on Reader Service Card

Air Conditioning Unit

Product: Polar-Breez air cooling units.



Manufacturer: Air Cooling Engineering Co., Evanston, Ill.

Features: This 10-ton unit uses only \$5 worth of water per year and electricity at a cost of only 5c per



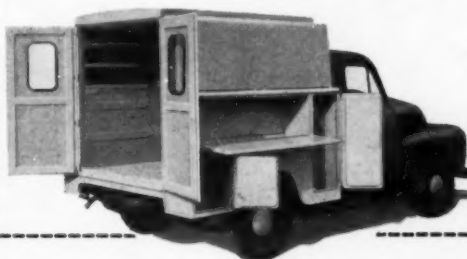
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SERVICE BODIES

**Designed Specifically to Save Time, Labor, and Money for
REFRIGERATION AND AIR CONDITIONING
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Now — with the addition of the new Upper Structure to Morrison's complete line of service accessories — you can equip your truck with a Morrison Carry-All Service Body which gives you all these advantages:

- Six Lockable Weathertight Compartments
- Totally Enclosed, Lockable Body
- Positive Protection for tools and supplies
- What you Need . . . When you Need It . . . Where you Need It . . . for Every Job
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- Models to Fit Any 1/2, 3/4 or 1-ton Chassis
- Complete line of Accessories for your Specific Needs



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— for all the facts on how the Morrison Carry-All Service Body with the new Upper Structure can pay for itself in on-the-job savings in time and labor.

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I'd like all the facts about Carry-All Bodies including cost and where I can buy them.

Name.....Title.....
Firm.....
Street.....
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Literature on request.

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WITH LEHIGH'S GREATER INTERCHANGEABLE PARTS

Or, to put it another way, a \$25 investment allows a Lehigh BLU-COLD wholesaler to carry Seals, Valve Plates and Gaskets for the entire BLU-COLD line from 1/4 H.P. thru 5 H.P. You must agree that this is not only a reflection of good engineering but a many sided advantage. Investment is smaller. Inventory is smaller. Less space is required. Turnover is more rapid (and percentage of profit!) Unit servicing is much easier and convenient.

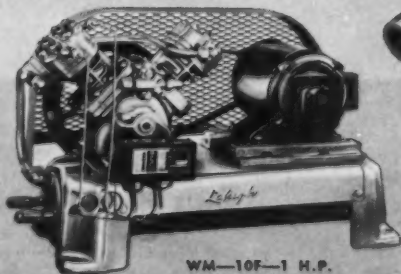
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THREE BASIC COMPRESSORS MAKE OVER 200 MODELS

with capacities from 870 to 70,000 BTU/Hr.
with over 50 generally interchangeable parts

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CONDENSING UNITS and SYSTEMS

Lehigh Manufacturing Co., Lancaster, Pa.

Division of Lehigh Foundries, Inc.

Manufacturers of Malleable and Grey Iron Castings • Refrigerating Equipment • Air Valves • Automatic Vending Machines

hour. Smaller units operate at correspondingly reduced running costs. Available in 3, 5, 7½, and 10-ton units. Units constantly force fresh air into area covered. Temperature reduction range is from 10 to 18 degrees. Unit requires no floor space, can be mounted in a window vent, on a roof, or in a place outside and away from the building. Ideal for installation where space is at a premium.

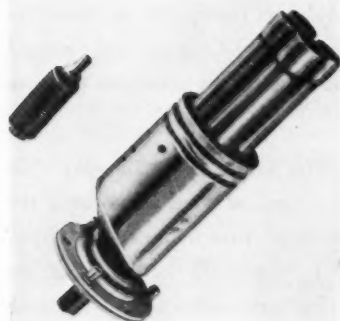
Circle No. 157 on Reader Service Card

Heat Pump Valve

Product: Hermetically sealed, manually operated 4-way reverse flow valve.

Manufacturer: Bridgeport Thermostat Div., Robertshaw-Fulton Controls Co., Knoxville, Tenn.

Features: Designed for use in ¾ and 1-ton heat pumps, valve acts to reverse flow of the refrigerant, causing unit to throw off heated air instead of cooled air, or vice versa. Units form the heart of heat pumps,



which are actually air conditioners serving dual purpose of both heating and cooling. Valves are all metal, contain no packing or synthetic materials which could cause clogging or leaks. Installation of the valve forms a completely hermetically sealed system which is capable of reversing its direction without restriction or loss of flow. A 2-ply beryllium copper bellows is used in the valve as a packing seal. Valves measure about 1½ x 5¾". Entire valve weighs only 14 ounces.

Circle No. 158 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

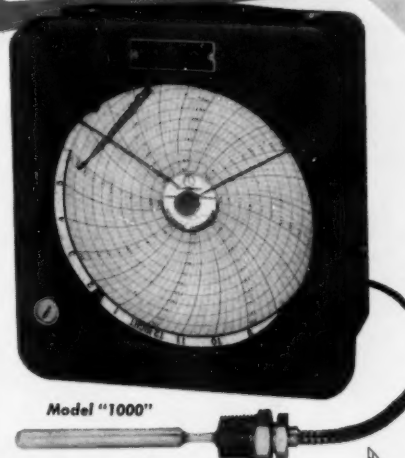
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AUTO-LITE

TEMPERATURE RECORDING...

Newly designed, Model "1000" Auto-Lite Recorder gives permanent proof of temperature behavior. • 6" clear reading chart; various standard ranges from minus 40°F. to plus 550°F. • 3 standard types; choice of 24-hr. or 7-day cycle. • Electric or mechanical chart drive. • With capillary tubing for remote reading. Priced from \$49.50.

Send for new catalog describing many styles of Auto-Lite temperature Recorders and Indicators.



Model "1000"

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
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TEMPERATURE RECORDERS

Tune in "SUSPENSE!"...CBS Radio Mondays...CBS Television Tuesdays

ROTARY SEAL

Replacement Units

The original replacement units—performance-proved in many thousands of installations during almost a quarter century. Available in a wide range of sizes for Commercial, Semi-Commercial, Air Conditioning and Household Refrigerator Compressors of well-known makes.

AT
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LEADING
JOBBERS



EASY TO
INSTALL
EFFICIENT
IN OPERATION
ECONOMICAL

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CHICAGO 14, ILLINOIS, U.S.A.

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It's easy to see that
PEAK PERFORMANCE
is built into
every

SPORLAN

SOLENOID VALVE

For no matter how large or small, whether pilot operated or direct acting, the first step to Sporlan Peak Performance is Simplicity of Design incorporating all proven, field-tested features.

The second step to Peak Performance is wound right into the Sporlan Solenoid Coil itself, then permanently sealed in... for Sporlan Solenoid Coils are layer wound (not random wound) and are interwoven with layers of cotton thread.

This construction prohibits build-up of damaging electrical pressure across the turns of wire, minimizing the possibility of coil burn-outs. After being twice dipped and baked to thoroughly impregnate the cotton thread insulation, each Sporlan coil is dipped in a protective sealer and again baked to prevent any moisture infiltration.

Test this easy-to-see Sporlan formula...
 Order several Sporlan Solenoid Valves from your wholesaler today and get Peak Performance on YOUR Solenoid installations!

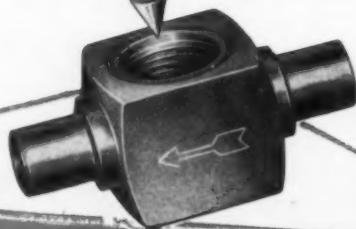
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Any size,
 any refrigerant or
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 has a Solenoid Valve
 to fit your job!



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FORTUNE REFRIGERATION CO.

3501-03 Hudson Boulevard
Jersey City 7, N. J.

April 8, 1954

Allin Manufacturing Co.
1153 W. Grand Avenue
Chicago 22, Illinois

Gentlemen:

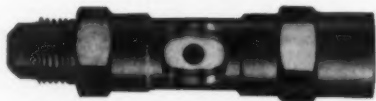
Its true value cannot be estimated. The Liquid Eye Indicator is easy to install. It takes the guess work out of charging a unit. It also enables the business man to detect trouble in his refrigeration system while the loss is still minor. The bubbling in the Liquid Indicator will show the serviceman that there is either a leak or restriction. It has saved many hours for the serviceman, which also benefits the employer. Out of all the Liquid Eye Indicators we have used, we find the "Allin Liquid Eye Indicator", by far, the best.

Very truly yours,
FORTUNE REFRIGERATION CO.
Leo Zitani

LIQUID EYE®

means:

- perfect refrigerant visibility.
- state-thru flow.
- leak-proof—high safety factor.
- spring loaded gaskets.
- standard wrench flats.
- instant analysis of refrigerant condition.



Sold by leading Wholesalers. Send for the new Allin pocket-size booklet showing all Liquid Eye sizes and styles

Allin

MANUFACTURING COMPANY

1153 W. Grand Ave.
Chicago 22, Illinois

WHY? TIME CONTROLS for AIR CONDITIONERS

..THE PUBLIC DEMANDS IT!



Model No. 1919GSK
24 Hour Plug-in
Up to 1 H.P.
Selective Days

- Automatic 'ON' and 'OFF' WHEN DESIRED. Adds Comfort and Economy.
- Automatic Skip Certain Days Weekly. A Must for Professional People.

* * *

A complete 24 Hour DAILY REPEAT
Portable-Plug-in Control.
Simple to connect.

So Little Added Cost for so Much
Added Comfort. Make Real Boosters
for YOUR LINE.

ACT NOW! DISTRIBUTORS

Do Not Depend on Summer Deliveries.
No Promises for July and August.
Scheduled Shipments Acceptable.



WRITE FOR FULL
DETAILS IN OUR
FREE BULLETIN!
NO. 354

TORK CLOCK CO. MOUNT VERNON
NEW YORK

The Accessory
You Have Been
Looking For.

in securing a continuance of the FTC hearings vs. the ice cream companies.

Local Western Union offices were supplied with texts of the proposed telegram, together with the names of RACCA members names in their localities. All that the individual dealer or contractor needed to do was to O.K. the telegram's charge.

All local RACCA members were urged to report their individual activities to national headquarters, so that all essential data could be used in compiling a report to strengthen RACCA's follow-up in Washington.

As the result of a company-wide sales drive that ended April 22, seven of Chrysler's Airtemp's sales managers are "weathering" the 1954 summer in sparkling new, fully-equipped, air-conditioned Dodge sedans.

The handsome awards were presented by J. F. Knoff, vice-president in charge of sales, to those managers whose regions topped Chrysler Airtemp's records on percentage-of-sales-to-quota ratio.

Best regional sales showings were turned in by Atlanta, under W. E. Edwards; Kansas City, F. G. Hill; Philadelphia, Harry Young; St. Louis, R. E. Davis; Detroit, P. J. Dalton; Dallas, G. S. Cobb; and Chicago, under D. E. Parke.

AMERICAN AIR FILTER BUYS MORRISON PLANT

American Air Filter Co. has purchased the entire plant and equipment of Ice Cooling Appliance Corp., Morrison, Ill. The 152,000 sq. ft. plant will be operated by AAF's Herman Nelson Div., Moline, Ill., which produces heating and ventilating equipment for schools, industrial, commercial and institutional buildings, as well as special portable heaters for Arctic Air Force bases.

SERVEL TO BUILD NEW EVANSVILLE WAREHOUSE

When completed, a new Evansville, Ind. warehouse building which Servel is planning to build will provide 267,000 sq.ft. of floor space for the storage of finished Servel products. The building will be 924' long and 310' wide.

To be located on 8 acres of ground adjoining the Servel plant, the new warehouse will be of steel frame construction.

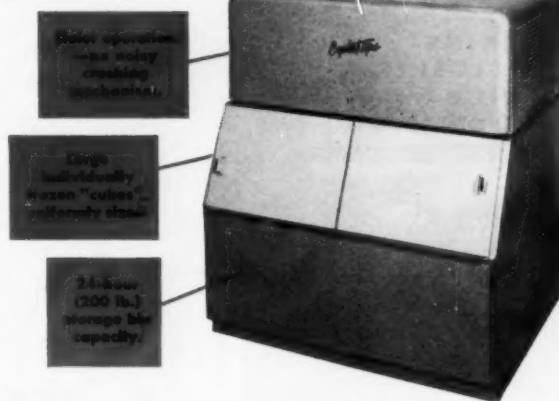
You're seeing **DOUBLE!**



**DOES THE JOB OF TWO UNITS
FOR THE PRICE OF ONE!**

In this day and age everyone is looking for bargains. By purchasing a B-200 the user pays for one but gets two-machine duty—standard size tips... or with the flip of a switch, chipped size ice. For this double feature your customer pays nothing extra.

Compare these plus features ➡



It's the complete 2-IN-1 Ice Service!

*Every commercial and institutional user of ice is a B-200 prospect.
Investigate your profit possibilities. Write for franchise details today.*

AMERICAN AUTOMATIC ICE MACHINE CO.

1795 Park Avenue N. W., Faribault, Minn.

and AIR CONDITIONING • JULY, 1954

CONDITIONING OUTLOOK . . .

Continued from page 74

As for so-called "big" air conditioning, installations in office buildings are currently leading this segment of the market, Wampler pointed out. In addition, a substantial volume of new business is developing in older office structures which are now undergoing extensive modernizing to meet the competition of the many new completely air condi-

tioned buildings erected since World War II.

Another important area of growth in big air conditioning involves department stores, both old and new. Many of the older establishments are modernizing and practically all new buildings are air conditioned at the time of construction.

Although air conditioning was developed initially over 50 years ago as an industrial tool and remained in this role during the first two decades of its existence, its use was confined almost entirely to assisting

in the process itself.

This situation is now changing, Wampler holds.

"In the increasingly competitive economy of today, air conditioning is becoming an essential to improved productivity. Among other advantages it provides employees with relief from heat and humidity, enabling them to work comfortably and efficiently, with a resulting overall reduction in production costs per unit.

"We are already beginning to see the start of this trend. For example, in textile production — one of the most completely air conditioned industries in the country — most of the past installations in spinning and weaving plants were designed to establish a constant humidity at fairly high levels because of the special characteristics of the fibers. But these systems did not provide positive temperature control.

Comfort Aids Production

"In the drive to improve production, there was introduced more automatic machinery and more intensive lighting, both of which contributed to the heat load. Consequently, over the past few years, many textile mills have found it advisable to add refrigeration to their humidity control systems so that comfortable working conditions would also be created to assist in efficient production efforts."

According to a recent independent estimate, over 2½ billion square feet of manufacturing buildings have been constructed in this country since 1929. This in itself presents a potential air conditioning market amounting to considerably more than \$10 billion at the retail level. And there is no doubt that a very substantial part of future industrial sales will involve plants still to be built and which must be designed for more efficient production, Wampler pointed out.

Altogether, total retail sales of all types of equipment and installations by the air conditioning industry will surpass \$4 billion in 1960, Wampler believes, a growth of over \$3 billion during the decade. This compares to estimated sales of \$2 billion in 1954 and actual sales of \$1¾ billion last year. Air conditioning will then be well on its way to the \$5 billion annual level predicted by 1963.

NOW! A FREIGHT ELEVATOR ON THE BACK OF YOUR TRUCK . . . with only one lever, one cylinder TO DO ALL OPERATIONS

Efficient material handling, into and out of trucks is now at its peak of perfection. So simple—so safe one man can handle loads up to 4000 lbs.—at one time. Load or unload anything, anywhere. Anthony design eliminates time-consuming operations—does this without extra cylinders, valves, controls, etc. A complete range of capacities for all trucks and semi-trailers.

New Brochure shows HOW you can save up to 50% on your trucking costs. Send for your copy today.

POWER

OPENING
CLOSING
LIFTING
LOWERING



Patd. & Pats. Pend.
U. S. and Foreign

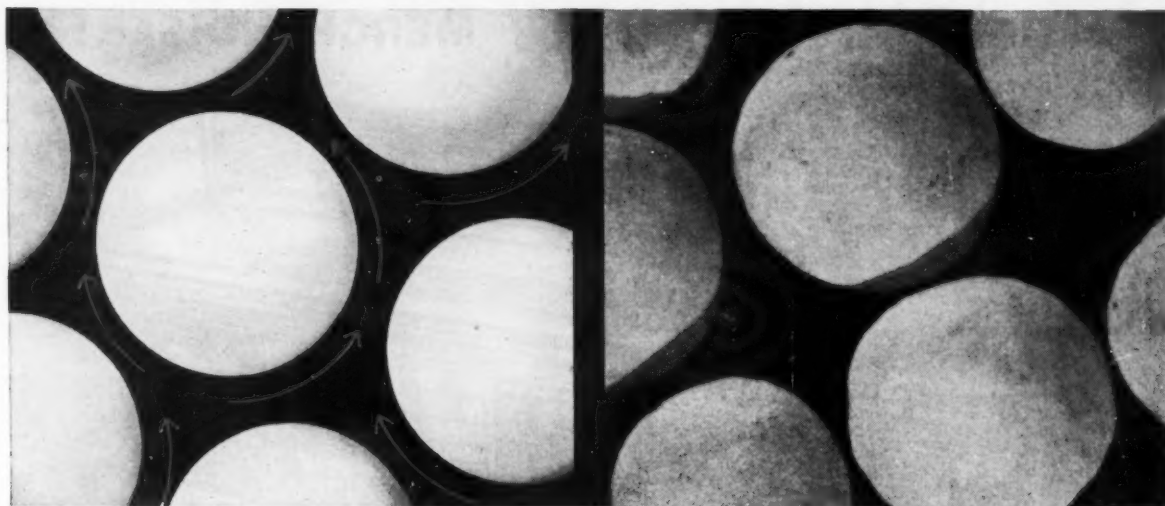


ANTHONY LIFT® GATES

The Power to lower delivery costs

ANTHONY COMPANY • STREATOR, ILLINOIS
DEPT. 5406-B

acid causes refrigeration system breakdown!



Pelletized spheres distribute flow, eliminate channeling.

Greater surface area traps more acids and moisture.

AN•DRITE

(ANSUL-TREATED 100% ACTIVATED ALUMINA)

removes acid!

Activated alumina in pellet form makes Ansul's new Andrite the double-duty desiccant. Its thousands of fast drying surfaces dry deeper—pulling moisture content way down. But even more important, Andrite removes acid, cleans up the chemical condition that causes sludge and corrosion—the major cause of refrigeration system breakdowns.

Designed for the revolutionary Ansul T-Flo Drier, Andrite won't break down or dissolve to plug filters or damage compressors.

And the drier is easy to install, too. Even replacement of the drier cartridge saves time, because it screws in like a light bulb. And no tools are needed. For fewer callbacks, speedier servicing, change to Ansul. And be sure to give new equipment double protection in acid and moisture removal. Use Ansul T-Flo Driers with Andrite.

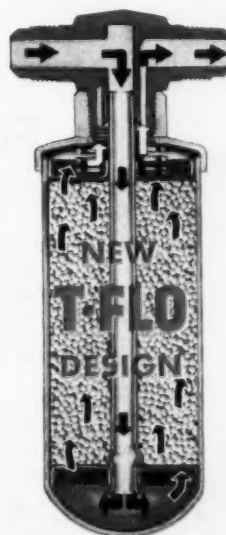
For more information or answers to your refrigeration problems write to: Ansul Chemical Company, Refrigeration Division, Dept. D-2, Marinette, Wisconsin.

DuPont "Freon," non-foaming oils, sulfur dioxide, methyl chloride



ANSUL

and AIR CONDITIONING • JULY, 1954



SCREWS IN LIKE A LIGHT BULB!

Circle No. 86 on Reader Service Card

KELVINATOR PRESENTS THE AUTOMATIC SELF-DEFROSTING ACCO SUPER-VIEW MERCHANDISER!



Thermopane Glass Front—
Full Width Open Top
Model GF-84AD, 7 feet long.
(Also available in 5-foot length, Model GF-68AD)

**JUST PLUG IT IN
AND FILL IT UP!**

ILLUMINATES...ATTRACTS...AND DEFROSTS ITSELF!

Now, a frozen food merchandiser that is fully automatic. Here is a cabinet that you can install and forget. It takes any size or shape package... has easily movable dividers... obstruction-free

interior. No expensive electrical or plumbing installation required. Get full information from your Kelvinator sales office... or write Kelvinator, Detroit 32, Michigan... today!

When your business depends on cold you can depend on

Kelvinator
THE BEST KNOWN NAME ON MODERN FROZEN FOOD CABINETS

**INSTALL IT
AND FORGET IT!**
NO SCRAPING—
NO STOCK LOSSES
NO BIG EXTRA PRICE
NO WORRY! NO WORK!

USEFUL

BULLETINS • BOOKLETS • CATALOGS

WALK-IN COOLERS built in knock-down section for easy assembly are presented in a catalog sheet available from Erickson Industries, Inc. Included are a photograph and an isometric drawing of a cooler which shows method of assembly. Complete dimensional and cooling data is presented for 19 different models.

Circle No. 121 on Reader Service Card

SHOWING HOW their business is being useful is the purpose of a 20-page brochure made available by Frigidaire Div., General Motors Corp. Included are photographs of reach-in refrigerators, low-temp cabinets, ice cube makers, water coolers, package and window air conditioners, dehumidifiers and compressors, and other Frigidaire products along with a few applications of each type product listed.

Circle No. 122 on Reader Service Card

SINGLE AND 2-STAGE vacuum pumps for dehydrating and testing refrigeration and air conditioning units are described and illustrated in bulletins 91 and 88, available from Beach-Russ Co. Each bulletin contains a photograph of the unit as well as a dimensional drawing. Specifications and design features are also listed.

Circle No. 123 on Reader Service Card

A SLIDEFILM in booklet form is available from Ingersoll-Rand Co. which deals with the selection of the proper motorpump for any specific job. The original slidefilm was prepared for Ingersoll-Rand's distributors and the booklet is made up from the slides for use as a reference guide. Included along with a brief description of what a centrifugal pump is and how it works is a presentation of a typical problem and its solution.

Circle No. 124 on Reader Service Card

A DUAL INDICATING temperature controller is covered in bulletin 6430 presented by Industrial Div., Minneapolis-Honeywell Regulator Co. Information on applications, control forms and ranges is included. The bulletin contains photographs of the controller with and without the front cover removed.

Circle No. 125 on Reader Service Card

PROPERTIES, USES AND METHODS of application of eight types of facings and coatings applied to superfine fiber glass insulation made by Libbey-Owens-Ford Glass Co. are contained in a handy guide available from the manufacturer. Included is information on aluminum foil, paper, fiber glass reinforced paper, vinyl, saran, neoprene coating, glass cloth and asbestos paper laminated facings.

Circle No. 126 on Reader Service Card

(More Useful Literature on page 100)

Temprite



WITH THE DEEP STAINLESS STEEL TOP

EVERYTHING about the beautiful Temprite Water Cooler is generous, substantial, sturdy! The sanitary stainless steel top is *extra deep*... the anti-splash guard *extra full*... The flow of cool water won't splash, won't spurt, won't find its way on to the surrounding floor!

Dismantle the Temprite, if you wish; look inside and you will see the fully corrosion resistant cooling system, the *extra strong* all-welded steel frame, and *heavy gauge* sheet steel cabinet panels. Built for years of service. The compressor is hermetically sealed and lubricated for life. Everything about the Temprite line spells **EXTRA QUALITY!**



Pressure
Bubbler Coolers
in Nine Models.



Bottle Coolers in standard
or compartment type.



Bubbler type compartment
coolers



Remote type coolers
in three sizes.



Temprite
accessories
include wall
fountains,
glass fillers,
transformers,
optional
push-button
control
assembly,
etc.

Since 1929
Temprite
PRODUCTS CORPORATION

P.O. BOX 728
EAST MAPLE RD.
BIRMINGHAM
MICH.

Circle No. 88 on Reader Service Card

4-CONNECTION *Cold-Cels** FOR EASY INSTALLATION



IMPROVED TRUCK PLATES Engineered to Maintain Any Temperature Required Throughout The Trip!

Now available in sizes to fit any application. In standard thicknesses: 4-Connection *Cold-Cels*—2½" and 2¾"; 3-Connection *Cold-Cels*—1" and 1½". May be installed in horizontal position suspended from the ceiling, in a vertical position along the walls, or as a partition. Can carry eutectic solutions ranging from -59° to +26°.

*Write for "*Cold-Cels* in Action"

DOLE REFRIGERATING COMPANY



5942 NORTH PULASKI ROAD, CHICAGO 30, ILL.
103 PARK AVENUE, NEW YORK 17

In Canada: Dole Refrigerating Products, Ltd.
44 Elgin Street, Brantford, Ontario



Circle No. 89 on Reader Service Card

USEFUL LITERATURE

Continued from page 99

THE LITTLE GIANT LINE of recirculating pumps, condensate pumps, and vaporizers is presented in an 8-page bulletin available from Little Giant Vaporizer Co. Cut-away views of the units are included along with a complete description. Specifications and various applications are also given.

Circle No. 127 on Reader Service Card

THERMOMATIC, automatic, manual and thermostatic temperature controls for oils, gases, liquids and refrigerants are concisely summarized in a 4-page catalog available from A-P Controls Corp. Design and development service for special-purpose units is explained and a "problem check" card for use by dealers, manufacturers and designers is included.

Circle No. 128 on Reader Service Card

YOUR RUST PROBLEMS can be solved, according to information contained in a tearsheet available from Rusticide Products Co. which describes "Ospho" rust-stopper. The chemical action of the rust-stopper is explained and a free sample of the liquid is also offered in the tearsheet.

Circle No. 129 on Reader Service Card

IF YOU WORK with aluminum, you will be interested in a folder which describes the protective and corrosive-resistance powers of "Alodine" No. 1200 coating for aluminum surfaces. Included are "before and after" pictures showing resistance to salt spray of surfaces covered either with white refrigerator enamel or uncovered. Five-step application procedure is also given.

Circle No. 130 on Reader Service Card

A CATALOG SHEET is available from S & R Soda Fountain Mfg. Co. which describes and illustrates the "Rel-Stand", a new self-service unit for serving mustard, catsup and other relishes. Specifications are given and a check list of the unit's features is included.

Circle No. 131 on Reader Service Card

MANUFACTURING METHODS used in making "Lektroneal" copper tubing, sizes and weights, applicators for radiant heating systems, steam and hot water lines, soil waste and vent lines and pump and irrigation systems are included in a 12-page pocket-sized bulletin available from Reading Tube Corp. Packaging and delivery service features are also included.

Circle No. 132 on Reader Service Card

PROPERTIES, USE AND CONTROL of straight calcium chloride as the brine medium in refrigeration and ice manufacturing systems is covered in a 66-page bulletin available from the Solvay Process Div., Allied Chemical & Dye Corp. Included are complete sections devoted to the properties of the brine, preparation and maintenance of brine, industrial applications, and miscellaneous information.

Circle No. 133 on Reader Service Card

(See page 77 for Air Conditioning Literature)

NEW PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

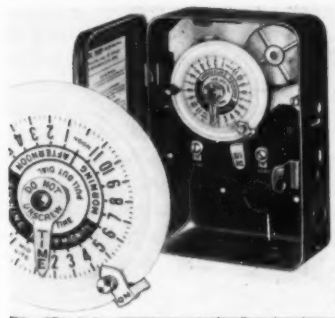
(For Air Conditioning Products turn to page 80)

Time Switch Dial

Product: "E-Z See" dial for Inter-Matic time switches.

Manufacturer: International Register Co., Chicago, Ill.

Features: Larger, more clearly defined numerals have been devel-



oped for use on this dial. Finished in black on yellow color combination found to be best under all light conditions. Dial will be standard equipment on all models. Combines with the "pull out and twist to set" feature to speed dial setting.

Circle No. 161 on Reader Service Card

Name Plates

Product: Name plates available with various wordings.

Manufacturer: Seton Name-plate Co., New Haven, Conn.

Features: Aluminum name plates especially designed and manufactured for air conditioning and refrigeration applications. Plates are $2\frac{1}{2} \times 3\frac{1}{4}$ ". Black enamel finish with raised natural aluminum letters and border. Designed for perfect fit on standard toggle switch plates. Over 100 standard refrigeration and air conditioning wordings available for shipment. No minimum orders required.

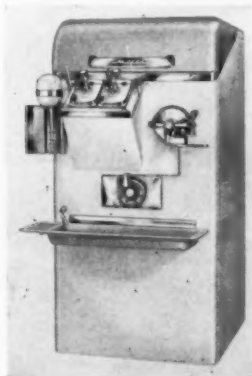
Circle No. 162 on Reader Service Card

Shake and Malt Machine

Product: Shake machine with built-in syrup pumps.

Manufacturer: Mills Industries, Inc., Chicago, Ill.

Features: Built-in refrigerated syrup pumps enable making three popular flavors (basic vanilla is one) without leaving the machine. Construction details include "Sentinel" control that makes unit fully automatic. No switches to operate. Merely open draw gate to obtain basic vanilla shake, add flavor and mix in shielded blender. Mix container, freezer barrel and syrup pumps and stainless steel, are



contained in separate insulated refrigerated chamber. Top and tray are of light blue plastic. Service to customers is rated at 17 to 25 gallons of shakes (weight) per hour, which does not include predetermined overrun, with a $\frac{3}{4}$ -hp condensing unit.

Circle No. 163 on Reader Service Card

Drinking Fountains

Product: "Indestruct" polished stainless steel drinking fountains.

Manufacturer: Filtrine Mfg. Co., Brooklyn, N. Y.

Features: Wall fountain offered in recessed or semi-recessed models. Both models furnished with stream-controlled approved sanitary bub-



bler and push-button glass filler. Modelled in 18-8 heavy-gage stainless steel, fountains will not chip or crack or become outdated after future building redecoration.

Circle No. 164 on Reader Service Card

3-Shelf Display Case

Product: "Royal Superette" triple-decker refrigerated display case.



Manufacturer: Brewer-Titchener Corp., Refrigeration Sales, Mt. Vernon, N. Y.

Features: Unit has 3 refrigerated display shelves plus one eye-level dry shelf, provides 21 sq.ft. of open refrigerated display in only 66" of floor space. Especially suitable to neighborhood delicatessens, dairy and bakery shops. Bottom compartment $21\frac{3}{4} \times 60$ " holds large cans, bottles, meats, etc. Middle and top 9×60 " refrigerated shelves

hold butter, cheese, etc. Top dry shelf, 5 x 60 x 9" high provides display space for condiments, jams, pickles, etc. Self-contained case has compressor located behind the superstructure to allow greatest product capacity. Compressor is cushion mounted to eliminate noise and vibration, is easily accessible through removable front superstructure panel. Defrost evaporation eliminates need for any plumbing. Unit is 66" long, 66" high, 30" deep. Gravity coil type refrigeration. Circle No. 165 on Reader Service Card

Volt-Amp Testers

Product: Three high-voltage "Amprobe Jr." pocket volt-amp testers.

Manufacturer: Pyramid Instrument Corp., Lynbrook, N. Y.

Features: Each tester available with two voltage ranges: 0-150/600 volts a-c and is available in an ammeter range of either 0-25, 0-50 or 0-100 amps a-c. For those servicemen who work mostly with 110 and 220 volt lines, tester is also

available in 0-125/150 volt models, in current ranges of either 0-10, 0-25 amps, 0-50 or 0-100. Amprobe Jr. does work of voltage tester, with



instrument accuracy on a calibrated scale. Gives instant current reading without need of shutting equipment down. Furnished complete with voltage test leads.

Circle No. 166 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

Refrigerated Display Case

Product: Model SCNI-51 self-contained, all purpose display case.

Manufacturer: Frigid Igloo Mfg. Corp., Yonkers, N. Y.

Features: Cabinet has 1,197 sq.in. of triple Thermopane vision. Gleaming white interior with contrasting aluminum shelves. Fluorescent lighting. White baked enamel exterior trimmed with fluted stainless steel molding around Thermopane front. Refrigerated by heavy duty coils. Unit is 51" long, 34" deep, and 53" high.

Circle No. 167 on Reader Service Card

Temperature Controller

Product: Series 97 electronic temperature controller.

Manufacturer: Fielden Instrument Div., Robertshaw-Fulton Controls Co., Philadelphia, Pa.

Features: Designed for wide range of applications where accurate temperature control is required, unit uses a resistance temperature detector element as a sensing device in a bridge circuit in conjunction



Model 3 Type 100

**HOT
OR COLD**

CONDENSATE DISPOSAL UNIT

This completely automatic foolproof unit removes hot or cold condensate fluids from the receiver tank and pumps it to an outside drain. Designed for simple installation in air conditioning units, the Eastern Condensate Disposal Unit offers low operating cost with fully automatic control and quiet, reliable operation. Free specification sheet CD-10 on request.

Eastern
INDUSTRIES, INC.
296 ELM ST., NEW HAVEN, CONN.

Circle No. 90 on Reader Service Card
JULY, 1954 •

COMMERCIAL REFRIGERATION

with a high gain phase sensitive amplifier relay unit. Single dial sets temperature control point, red and green lights indicate whether temperature is above or below the set point. Single pole 2-way control contact handles 220 volts at 5 amps. Standard ranges are 0 to 100, 300



or 500 F and C but any range between -200 and 500 C can be supplied in conjunction with an appropriate resistance bulb. Sensitivity is 0.25° F on all ranges. Only two vacuum tubes are employed. Unit is encased in strong cast aluminum housing 6½ x 7½ x 4" deep.

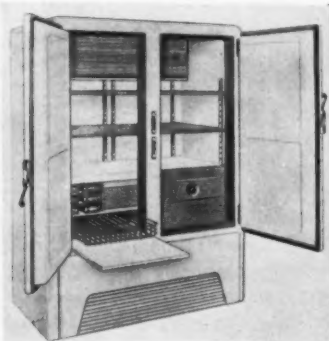
Circle No. 168 on Reader Service Card

Reach-in Refrigerator

Product: Model RI-20 reach-in refrigerator for commercial or residential applications.

Manufacturer: McCray Refrigerator Co., Inc., Kendallville, Ind.

Features: Dual temperature, twin door upright reach-in has a



net usable space of 19.27 cu.ft. with 14.42 cu.ft. carrying normal temperature and 4.85 cu.ft. for freezer storage, including ice cube compartment. Normal temperature upper section is refrigerated by a gravity type coil with adjustable tempera-

ture control which defrosts automatically and requires no drain. Shelves are adjustable to any desired position. Low temperature compartment in the bottom is protected by 2 drop-down, hinged doors which are strongly braced to support weight of wire baskets. Baskets in bottom section slide out and eliminate stooping, reaching and searching. Removable ice cube makers and easy-out trays are located in the upper freezer compartment.

Circle No. 169 on Reader Service Card

Starters and Contactors

Product: Line of magnetic, across-the-line starters and contactors.

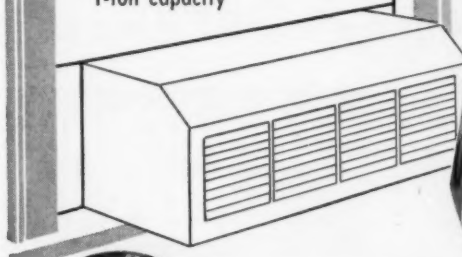
Manufacturer: Arrow-Hart & Hegeman Electric Co., Hartford, Conn.

Features: Designed specially for use with refrigeration compressor motors for either air conditioning or refrigeration applications. To provide special tripping characteristics required by hermetically sealed motors for protection against burnout, these controls can be

Announcing PARAGON'S NEW 3700 SERIES WINDOW AIR CONDITIONER SWITCH



PROFITABLE "early bird" that saves on business and professional office systems — to 1-ton capacity



Inner dial set for ON operation any hour. Once set, the same setting prevails each day without resetting. Dial adjustable in 15-minute increments.

Dial trippers on outer dial may be varied to shut OFF unit at a different hour each day or set to eliminate Sundays and holidays.

Easy to set . . . provides regular daily settings and irregular weekly operation, including Sunday and holiday cutouts

The Paragon 3700 Series timer can be set to "get to the office early" and turn ON window air conditioners *before* business hours. Even "stays late" to turn them OFF after closing hours.

The complete convenience and flexibility of the 3700 Series timer ends unnecessary air-conditioner operation . . . saves money week-ends and holidays. Switch may be manually operated at any time without disturbing sequence of automatic operation. A sales clincher for *any* window air conditioner! Write for Bulletin 5470, Dept. 1668.

Also write for complete facts on these famous Paragon timers

Commercial Defroster



Dehumidifier Timer



7-Day Calendar Dial Time Switch

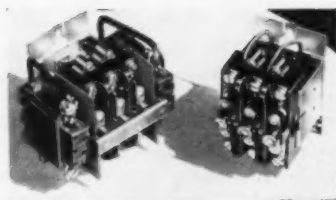


Fan Timers



PARAGON ELECTRIC COMPANY
TWO RIVERS, WISCONSIN WORLD'S FOREMOST MANUFACTURER OF TIME CONTROLS

equipped with type QT quick-trip heaters. Both quick trip and standard heaters fit standard overload relays and require no special equipment such as spindles or non-standard relays. Rated at 30 amps at 300 volts maximum a-c only to cover all compressors to about 8-tons capacity. Covers about all installation needs, eliminates large and costly inventories. Built-in straight-through wiring used in these controls eliminates looping and u-bending, saves space and installation time. Extra rugged con-



tacts of finest materials. Constructed for greater efficiency and low wattage consumption. Slotted mounting holes permit quick removal of the unit.

Circle No. 170 on Reader Service Card

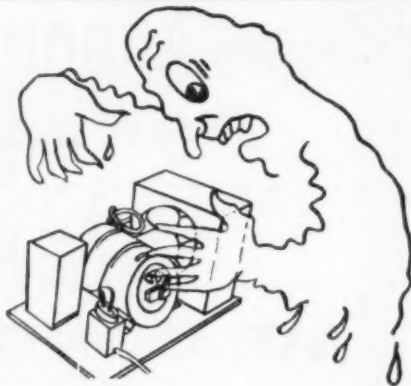
What's all the "Scare" about ACIDS?

HERE ARE THE FACTS:

The Cause is well-known . . . moisture!

The Prevention is simple . . . a good drier!

The "Cure" is available . . . a neutralizing desiccant!



Why wait for Acids? **PREVENT** them with



**PERMAGRAN®
DRIERS**

No desiccant surpasses patented PERMAGRAN for fast, high-capacity, low-dew point drying under actual refrigeration conditions. And, cubic inch for cubic inch, no desiccant equals PERMAGRAN in ability to neutralize acids.

Protect every installation against moisture—acids—foreign matter with the drying—filtering—neutralizing action of McIntire DC Filter-Driers charged with PERMAGRAN. There is no greater assurance of dry, clean, trouble-free systems.



Buy OFN-PERMAGRAN Driers at your wholesaler

The McIntire Company, Livingston, N. J.

Since 1925

DRIERS • FILTERS • STRAINERS

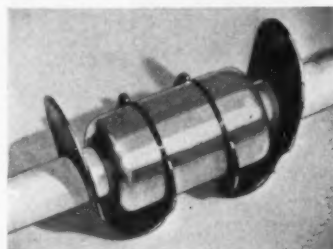
Circle No. 92 on Reader Service Card

Pipe Coupling

Product: "Meca" coupling for connecting tubing and pipe in any size range.

Manufacturer: Master Enterprise Corp. of America, Tulsa, Okla.

Features: Requires no threading, flares, or tools of any kind to make the connection. Can be connected to pipe or tubing in short time. Will withstand extremely high pressures. Coupling has grooves at



each end which contain rubber O-rings or silicone or tefalon rings, depending upon use. Sleeve is tapered on the inside to allow for any variation in the outside diameter of the tubing or pipe. Coupling has a stop in the center that allows the insertion of the tubing or pipe to fit equally in each side. Spring clip grips tighter as pull pressure is applied. Method of installation is to press the spring clip, insert the tube, and release the spring. Coupling is available in all sizes and types of materials and is designed with special O-rings for any type of liquid, gases or temperatures. Available also as Tees, elbows and connectors with a threaded end and hexagon outside.

Circle No. 171 on Reader Service Card

Water Chiller Lines

Product: Two lines of packaged water chillers.

Manufacturer: Schnacke, Inc., Evansville, Ind.

Features: Standard line consists of 7 models supplied with integral equipment pre-selected and assembled into a self-contained package, including a full operating charge of Freon at 2 different operating suction temperatures, 35 and 40 F. Model S line allows selection and building on paper over 384 variations of equipment, subsequently ordering the exact variation desired, with shipment made on a

completely packaged basis. Covers from 10 through 60-ton range. No field installation required other than hooking up power supply, water supply lines and circulator and adjust.

Circle No. 172 on Reader Service Card

Automatic Door Controls

Product: Automatic controls for refrigerated warehouse and cooling room doors.

Manufacturer: Magic Door Div., Stanley Works, New Britain, Conn.

Features: Doors equipped with automatic controls automatically open without being touched, stay open as men and materials pass through, and then close when the passageway is clear. Bell-crank lever attachment makes doors shut tightly, maintaining desired temperature and humidity conditions. Lever attachment holds the door closed against the frame with pressure of 150 psi, eliminating almost all leakage. Usually installed over refrigeration doors, door operator



can be controlled by pull cords, push buttons or floor plates. Interval when door is open can be adjusted to meet specific requirements.

Circle No. 173 on Reader Service Card

Paste-Type Solder

Product: "Swif" 50-50 lead-tin solder.

Manufacturer: Hercules Chemical Co., New York, N. Y.

Features: Designed primarily

to speed sweat soldering and tinning operations, since material cleans, tins and sweats in one operation. Flux in the solder chemically cleans surfaces and also allows solder to flow freely forming a secure bond. Pre-cleaning and pre-heating is not necessary. Swif solder is simply brushed on, heated, and the job is done. Manufacturer reports tests which show that Swif solder withstands pulls of 2000 lbs. on 1/2" copper sweat joints, withstands hydrostatic pressures of 3600 psi.

Circle No. 174 on Reader Service Card

Frozen Food Case

Product: Model 3810C self-service frozen food case with "no glass front" feature.

Manufacturer: Sherer-Gillett Co., Marshall, Mich.

Features: No glass front enables low-level selling height of the 10' long case of only 36". Low height enables shopper to reach to extreme rear and bottom of the case without stretching. Effective range of eye-



install Hirsh Pre*Bilt shelving, too!



Don't settle for just part of a job when there are still more profits for the taking. Install Hirsh Pre*Bilt shelving, too! It gives you an edge over competing bidders when you can do a complete job! Hirsh shelving is simple to install—it's so easy your customers can do it themselves. Both wall shelving and gondolas in the Pre*Bilt economy lines are pre-finished and complete—there's nothing more to buy.

S. A. Hirsh Mfg. Company
8051 Central Park Avenue
Skokie, Illinois DEPT. CR-7

Gentlemen:
Please send me _____ without obligation _____ your free literature on Hirsh Pre*Bilt wall shelving and gondolas.

name _____

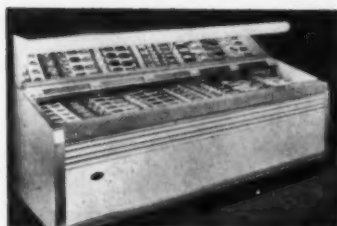
firm _____

address _____

city _____ zone _____ state _____

write now for information and prices ►

appeal of merchandise to shoppers approaching the case is increased. Cooling is Sherer's patented "Recirculated Air" system. This new application of the cooling system involves a reversed air flow which insures thorough circulation of controlled velocity air in the display area. Controlled, low velocity of moving air reduces possibility of air escaping over sides of cabinet. System results in less unit running time, lowers operating costs, maintains better temperatures. Case is available with either a fixed mirror



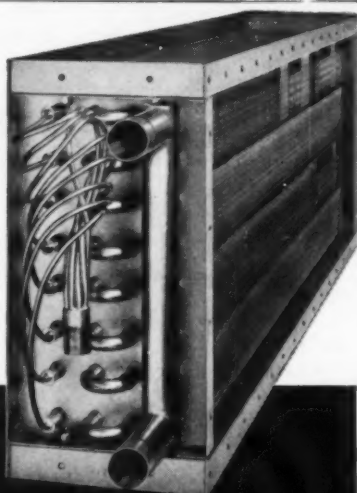
superstructure or with sliding mirrored doors. When superstructure is not desired, a stainless steel cap is substituted.

Circle No. 175 on Reader Service Card

for any air direction

Tenney AC4 COILS

with Universal Suction
Connections



Standard, 4-row, AC4 Coil for air conditioning of stores, homes, and offices... wherever built-up systems are used with or without duct distribution. Available in 5 capacities in 11 popular sizes with F-12, F-22 refrigerants.

Tenney AC4, standard 4-row air conditioning coils are the perfect, standardized line of direct-expansion coils. Construction includes $\frac{5}{8}$ " O. D. copper tubing; Facetized Fins for greater heat transfer; heavy-gauge steel top, bottom, and end plates (aluminum on request); all copper suction headers; high-temperature, hard solder tube joints; and inert atmosphere inside tubes for clean, scale-free refrigerant passes.

These Tenney AC4 Coils can be sold and installed with complete confidence for any air direction, through universal suction connections. Like all Tenney products they're backed by sound engineering and quality workmanship that guarantees easy installation and customer satisfaction. Ask for Bulletin 103-54.

APPLICATION DATA

Model No.	Nominal Tons	Distributor Connection	Suction Connection	Finned Lgth.	Finned Hgt.	DIMENSIONS			Face Area Sq. Ft.	Recomm. Cfm.
						A	B	C		
ACA-2A	2	N" O.D.	1 1/2" O.D.	29"	7 1/2"	3 1/2"	1 1/2"	2"	1.51	750
ACA-2B	2	N" O.D.	1 1/2" O.D.	20"	11 1/2"	3 1/2"	1 1/2"	1 1/2"	1.56	750
Complete range of models and sizes										
ACA-25C	7 1/2	1 1/2" O.D.	1 1/2" O.D.	30"	22 1/2"	4 1/2"	1 1/2"	1 1/2"	2.63	2800
ACA-10A	10	1 1/2" O.D.	2 1/2" O.D.	58"	18 1/2"	4 1/2"	1 1/2"	1 1/2"	7.56	3750
ACA-10B	10	1 1/2" O.D.	2 1/2" O.D.	48"	22 1/2"	4 1/2"	1 1/2"	1 1/2"	7.50	3750



Tenney
ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, N. J.
Plants: Union, N. J. and Baltimore, Md.

Engineers and Manufacturers of Refrigeration and Environmental Equipment

Circle No. 94 on Reader Service Card

Capacitor-Resistor Bridge

Product: Model BF-60 capacitor-resistor bridge.

Manufacturer: Cornell-Dubilier Electric Corp., South Plainfield, N. J.

Features: Bridge quickly measures important characteristics of virtually all types of capacitors and resistors and determines their quality. It detects open, shorts, and intermittents; capacity between wires



and shavings, transformer windings, etc. Enables measurement of insulation resistance of paper, mica and ceramic dielectric capacitors. High sensitivity amplified bridge circuit permits accurate and definitive readings. Capacity, power-factor leakage and insulation resistance measurements rapidly made. Adjustable d-c power supply and "eye" null indicator.

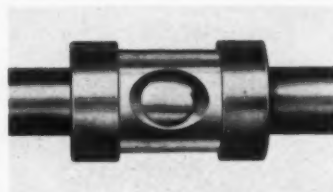
Circle No. 176 on Reader Service Card

Liquid Indicators

Product: Series 5000 job-rated liquid indicators.

Manufacturer: Allin Mfg. Co., Chicago, Ill.

Features: Indicators use high pressure Pyrex glass tubing sized to liquid line capacities for full flow of refrigerant or other liquids. All the liquid flows through the



glass and is visible at the double port openings in the housing. Absolutely tight seal between the glass and the housing is maintained by springs, contained within the housing, pressing against the gaskets;

assisted by fluid pressure in the line. To guarantee the safety of the indicator, hydrostatic tests have been conducted where the glass tubing has withstood pressures of up to 1000 psi. End connectors are sealed with plastic plugs to assure no oxidation of the copper, enabling easier soldering into the line. Any silver alloy brazing metals can be used for making tight joints without dismantling the unit. Available in copper tube sizes from $\frac{3}{4}$ through $2\frac{1}{8}$ " and iron pipe threads from $\frac{1}{2}$ through $1\frac{1}{4}$ ". Larger sizes in both tube and pipe sizes available on special order.

Circle No. 177 on Reader Service Card

Fountain Unit

Product: Model 635 3-sink bob-tail fountain unit.

Manufacturer: S. & R. Soda Fountain Mfg. Co., New York, N. Y.

Features: Unit has welded steel construction, is finished in stainless steel. This 5' long unit also has an



embossed one-piece top; 4 syrup jars and pumps; 1 single chocolate jar and pump; 1 crushed fruit jar and cover; 2 insulated draft arms; 1 disherwell in the syrup rail; 1 spoon holder; hinged cover over the bottle storage compartment; a chipped ice pan under the hinged cover; a towel bar; and 3 deep-drawn sinks with leverwastes. Unit is 31" wide, about 40" high.

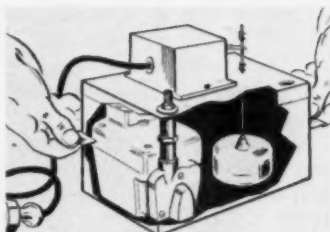
Circle No. 178 on Reader Service Card

Condensate Pump

Product: "Gelber Bantam" miniature condensate pump.

Manufacturer: S. S. Gelber Co., Chicago, Ill.

Features: Especially designed for removal of condensation in me-



chanical refrigeration and air conditioning units. Can be incorporated in original equipment since pump measures only 5 x 8 x 5". Pump motor is hermetically sealed

in oil, cannot become wet either from dripping water or condensation. Glass insulated terminals are UL approved. Neoprene seal is housed in stainless steel. All external screws also stainless. Pump case is die-cast aluminum with baked-on plastic coating. Unit is electrically grounded. Pump develops 4 psi, has a shut-off head of $9\frac{1}{2}'$. Discharge volume ranges from 180 gph at 1' head to 28 gph at 8' head. Copper float and electric switch actuate the pump as condensation rises in the container. Water

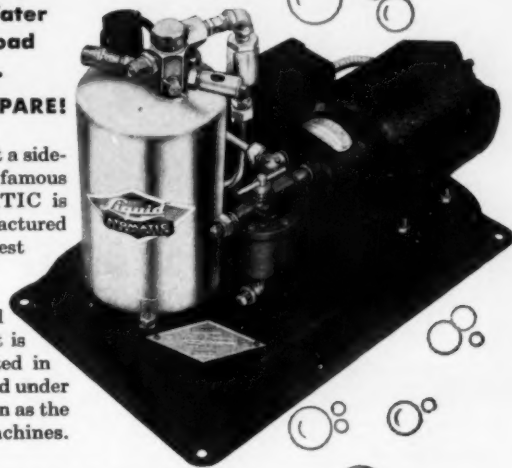
THE LIQUID ATOMATIC CARBONATOR... built by Carbonator men!

**SIMPLE TO INSTALL—
EASY TO SERVICE—**

**Produces Highly
Carbonated Water
under peak load
conditions.**

CAPACITY TO SPARE!

Carbonators are not a sideline with us. The famous **LIQUID ATOMATIC** is designed and manufactured by the world's largest producer of machinery for the carbonated beverage-bottler. It is assembled and tested in the same factory and under the same supervision as the larger bottlers' machines.



**PROFITABLE, SALES-SERVICE
FRANCHISES OPEN NOW**

It is easy to sell—Ideal for Fountains,
Restaurants, Drive-Ins and Bars. Write to:



THE LIQUID CARBONIC CORPORATION
3100 SOUTH KEDZIE AVENUE — CHICAGO 23, ILLINOIS

Circle No. 95 on Reader Service Card

is pumped out until tank is empty. Float switch cuts off automatically and ball check in discharge line prevents back flow.

Circle No. 179 on Reader Service Card

Service Hoses

Product: Two refrigeration service hoses designed for the lowest possible diffusion of refrigerants.

Manufacturer: Electric Hose & Rubber Co., Wilmington, Del.

Features: Hose was designed to meet a variety of needs in refrigeration and air conditioning applications. Can be easily installed in refrigeration units of boxcars, trucks, cold storage rooms and ships, as well as in air conditioning units in homes, offices, automobiles, etc. Will not contaminate the refrigeration system, is resistant to oil. Serviceable over a temperature range of -40 to 250 F. Style 3541 designed for use with F-12; style 3542 designed for use with F-22. Both styles made in wide ranges of sizes, from 3/4 to 1 1/4" I.D.

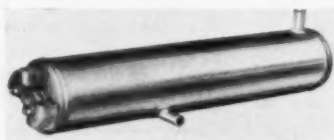
Circle No. 180 on Reader Service Card

Freon Condensers

Product: Line of ASME constructed and stamped extended surface Freon condensers.

Manufacturer: Bell & Gossett Co., Morton Grove, Ill.

Features: New line consists of two styles of units. Model CFG shell and coil condensers are designed to fill the need for low cost



condensers in small tonnage installations. UL approved shell and coil condenser is available in 2, 3, 5, 7 1/2 and 10-ton sizes. Model CRF condenser is straight tube unit with removable heads. This design is constructed and stamped in accordance with ASME unfired pressure vessel code. Model CRF also available in 2 through 25-ton sizes.

Circle No. 181 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

Frozen Food Cabinets

Product: Complete line of cabinets manufactured exclusively for merchandising frozen foods.

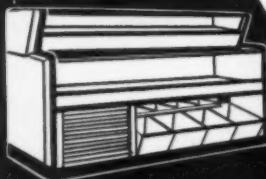
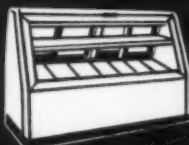
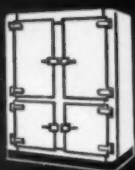
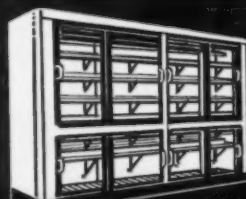
Manufacturer: Schaefer, Inc., Minneapolis, Minn.

Features: Six cabinets with superstructures and 2 models of the sliding glass top type. The eight models range in capacity from 12 to 22 cu. ft. Smallest model holds 437 standard frozen food packages. Largest unit holds 660 packages in the self-service display section with a large storage compartment beneath which will hold 10 cases. Features of the various models include: a lighted superstructure; self-defrosting; plastic superstructure; and clear vision glass fronts. Sliding top types have capacities of 14.1 and 20 cu. ft., respectively.

Circle No. 182 on Reader Service Card

McQUAY NAMES M. & E. PHILADELPHIA OUTLET

M. & E. Refrigeration Accessories Co. has been appointed a wholesaler in the Philadelphia area for McQuay, Inc.



Pinnacle REFRIGERATED EQUIPMENT

Most Complete Line in the Country!

**MR. DEALER! HERE'S
BIG MONEY FOR YOU!**

PINNACLE Single Duty SELF SERVICE CASE

will give your sales a Big boost because it is the most-wanted Fruit and Produce Self Service Case on the market today, believe us! Small store operators are cramped for space and need this refrigerated space-saving case to eliminate spoilage of perishables. What's more—it goes through a 36" doorway! Then too, it has all the features grocers want, such as Large Storage and Display areas . . . Removable Storage Bins . . . Gleaming White Life-time Porcelain on exterior front, ends and wearing surfaces . . . Fluorescent Lighting . . . Low Operating Cost, etc. Comes in 6 - 8 and 10 Foot Lengths. Self-contained Models also available.

OPEN SELF SERVICE — Dairy-Meat-Vegetable Cases, Self-Defrosting Freezers, DELICATESSEN CASES.

A few Pinnacle Territory Franchises are still available. Wire or write today for full information and illustrated literature.



REACH-IN BOXES, BAKERY FREEZERS, BUTCHER CASES . . . Double and Single Duty.

FULL VISION CASES, WALL BOXES . . . Dairy and Beverage DOUGH RETARDER BOXES, etc.

Pinnacle

EQUIPMENT CORPORATION
FLEETWOOD, PENNSYLVANIA

EXPORT DEPARTMENT — 39 Broadway, New York

Circle No. 96 on Reader Service Card



"Virginia" Refrigeration Products eliminate call-backs

What makes a refrigeration system inoperative?

Some common troubles include stuck valves, dirty strainers, corroded lines, sludging, plating, carbon. Basically, all these things are caused by poor-quality refrigerants or refrigeration oils.

What's the solution? Here are two which we strongly recommend for high efficiency as well as trouble-free operation—

"Virginia" Refrigerants plus Suniso Oil or
"Freon" Refrigerants plus Suniso Oil.

Servicemen who insist on these high-quality products are smart. They know they can fill a refrigeration system with "Virginia" refrigeration products and forget it. Thus time-consuming, expensive call-backs are eliminated.

Your wholesaler undoubtedly has these fine-quality refrigeration products. Or write Refrigeration Division, VIRGINIA SMELTING Co., Dept. 64, West Norfolk, Va.

VIRGINIA
Chemicals

ESOTOOL • V-METH-L • KINETIC CHEMICAL'S "FREONS"
CAN-O-GAS • PERMACUM • PRESSTITE TAPE
SOLVEX PRODUCTS • SUNISO REFRIGERATION OILS

Available in Canada and many other countries

RANCO DUAL PRESSURE CONTROL

... safety-guarantee for your air conditioning service

Your customers will appreciate the protection of this Dual Pressure Control ... and here's why:

High pressure cut-out with non-adjustable high pressure limit stop safeguards the system—prevents service adjustment above the maximum safe operating pressure. Low pressure safety cut-out prevents pulling air into the system with excessive low pressure operation.

In either event, the system shuts down until restarted with the manual reset. Both high and low pressure ranges are independently adjustable.

Add up those features and you'll understand why Underwriters Laboratories requires this type of control on all hermetically sealed air conditioning systems ... why both you and your customers will

consider it well worth the few minutes it takes to install.

Make your next job a Ranco Dual Pressure Control installation ... now available in Types 012-1593, 012-1594 and 012-1595 ... a safety-guarantee for your air conditioning customers.

3 R's OF THE INDUSTRY

Ranco Replacement Reference No. 1544 lists almost 5,000 replacement controls ... the most complete line in the industry. This big, new manual can be purchased from your Ranco wholesaler. Get yours now.



THE SERVICE MAN'S DEPARTMENT

HERE'S HOW!

Motor Burn-Outs Require Dehydration of System

In any cases involving major repair of hermetic refrigeration systems where the motor has been burned out, the compressor will doubtless be removed from the unit and replaced.

The replacement compressor will, of course, be clean and dehydrated, but the rest of the system will require careful attention because of the very appreciable amounts of water, acid, and black sludge produced by the burning out of the motor.

Remove and replace the liquid line strainer. Remove and clean thoroughly the expansion valve strainer.

Blow out the low side of the system in the reverse direction of refrigerant flow from the compressor suction valve connection back through the cooling coil and the liquid line, which should be disconnected at the condenser liquid outlet valve.

Blow out the high side of this system in the direction of refrigerant flow from the compressor discharge valve through the condenser, letting the dirt, moisture and other impurities come out through the liquid valve at the bottom of the condenser.

Because of its good solvent action, it is well to use a few pounds of new, dry Freon for the flushing operation.

Now, reassemble the system, but do not connect it to the new, dehydrated compressor.

Proceed now to evacuate the system less compressor. It is wise to use the overnight evacuation method, as it is still possible for appreciable quantities of moisture from the burned-out motor to be

I DO IT THIS WAY

METAL screws are being used more and more each year in refrigeration equipment and, while they save time, they occasionally cause trouble by stripping and not holding as tight as they should.

Substitution of a slightly larger screw often remedies the situation, but if a larger screw is not available, here is a simple method which has helped me many times.

When you encounter a stripped screw, remove the screw from the hole, bend a piece of wire or a paper clip into a V-shape and hang it in the hole. Insert the screw again into the hole, and it will tighten satisfactorily.

Arthur Schenk, Jr.
Phillipsburg, N. J.

* * *

This serviceman earned \$5 by submitting the above item to our Here's How Editor. Why don't you send in your favorite service idea, and earn \$5 too?

trapped in the many crevices of the evaporator and the condenser.

Break the vacuum with Freon and quickly connect compressor. Evacuate the complete system at a vacuum of 0.1" of mercury absolute for at least four times as long as the compressor was open.

Break the vacuum with Freon, then re-evacuate as before. Charge the system with the prescribed amount of the correct Freon refrigerant and set it in operation.

BUY FROM YOUR
REFRIGERATION WHOLESALER

FOUNTAIN FREEZER SERVICE Oil Saturation

In a high power short-coupled system such as used on fountain freezers and milk shake machines, too much oil can be as bad as too little oil. It will cause continual pumping of oil and saturation of oil on the refrigerant feeding the evaporator, with resultant slow freezing.

Since fountain freezers are usually turned off overnight, it is important that the machine be operated for 2 or 3 hours before an oil level is determined, since oil will circulate more heavily during the early period of operation before temperatures are stabilized.

Evaporator Flooding

It is important that the evaporator be fully flooded while the freezer is operating, in order to achieve any kind of acceptable performance. While it is sometimes the practice to check the flooding of evaporators by pressure readings, variations in the gauges can be of sufficient error to cause the evaporator to flood incorrectly.

Inspecting the frost line to make sure that it is coming out of the evaporator and going into the heat exchanger, yet not into the compressor, is essential. Failing to do this will not only cause slow freezing, but it will affect the performance of the temperature control. Many such controls have been changed with the belief that they were not working correctly, and yet upon test it was shown that they were in A-1 condition, but that the diagnosis of defective temperature control was due to improper expansion valve adjustment or, in the case of capillary tube systems, improper charge.

Having TROUBLE with Connection Leaks?

RECTORSEAL is a positive, easy way to end this trouble. Insoluble in refrigerants, such as freon and anhydrous ammonia . . . in all petroleum products



and water, Rectorseal assures leak-proof connections throughout refrigeration and air-conditioning installations. You don't need a different sealant for each commodity . . . Rectorseal holds them all.

It's easy and economical to use. Apply direct from

the convenient brush-top cans without waste or excess. Rectorseal has a 16 year record of successful sealing in the petroleum industry, LPG and public utility fields.

• Let us send you a generous FREE sample. Just write.

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2215 Commerce St. • Houston 2, Texas

RECTORSEAL # 2

LARKIN

MEANS EFFICIENCY



LARKIN HALF-TURRET HUMI-TEMP

Efficient operation makes a product easier to sell on one hand; builds solid customer satisfaction on the other. Precision engineering, only the best materials, skilled craftsmanship, and over 25 years experience in commercial and industrial refrigeration add up to higher efficiency for every Larkin product. And this means lower operating costs—important to buyer and seller alike.

Manufacturers of the original Cross-Fin Coil
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils
• Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS

319 MEMORIAL DR., S.E. • ATLANTA, GA.

ON THE SPOT . . .

Continued from page 67

under way. Engineers will set the heat pump and its controls at various levels, seeking the most economical point for its operation under family living conditions.

Basically, the engineers know, of course, that one kilowatt hour of electricity produces 3,415 Btu. If that same amount of current is consumed through the heat pump, its coefficient of performance is two or three to one.

"We reason that's like finding one or two kilowatt hours for every one purchased by the homeowner," the spokesman added. "When we complete these calculations, we'll know how many kilowatt hours can be consumed through the heat pump with the resulting 'bonus' to the buyer and the lowest number needed for booster heating through the resistor blocks.

"We could have installed a larger compressor, which would reduce the extra heating, but we believed it

would be too costly for average year-round installation and use."

It will be a year, possibly as long as three years, before the engineers are satisfied that time and temperature range have provided them sufficient data for their calculations, which should prove of importance to the entire air conditioning field.

The air-to-air heat pump was selected for the Kansas City test, rather than water or ground coil units. There's plenty of air but water, particularly in the city's suburbs, can become a costly item, it was pointed out.

The heat pump with its recording meters is installed in a corner of the spacious 2-car garage with its electrically controlled doors. It is barely noticeable. Yet so importantly is it regarded as a possible answer to year-around living comfort that the Kansas City Power & Light Co. has spent more than \$35,000 to build this beautiful laboratory for a clinical analysis of its operation.

AUTO CRASH KILLS PENN BOILER HEAD

Earl C. Stauffer, 54, president and founder of the Penn Boiler and Burner Manufacturing Corp., Lancaster, Pa. was fatally injured May 7th in an automobile accident near Circleville, Ohio.

SCHNACKE UNITS USED IN RYUKYU ISLANDS

Headquarters, Far East Air Forces, recently announced the completion of an installation, by Okinawa Engineering District, U. S. Corps of Engineers, of five 40-hp, direct-drive Schnacke compressor units at the military installations on the Ryukyu Islands according to Frank D. Klein, sales manager for Schnacke, Inc.

This group of units, is one of a number of such groups tested and accepted by the Air Forces for off-shore installation.

O. O. Taylor & Sons, one of three Schnacke representatives covering the western territory figured in the negotiations leading to the specification, sale and acceptance of these units intended for the Ryukyus.

DELAVAN

Complete Line of Precision

REPLACEMENT PARTS

•
•
PISTON PINS
PISTON RINGS
VALVE REEDS
FLAPPER & PISTON
VALVES & REEDS

and all other Compressor parts shown
in CATALOG No. 50C

Now Manufactured by

» PROSTACO »

PRODUCTION STAMPING COMPANY

2316 SOUTH 24th ST.
OMAHA 9, NEBRASKA

Circle No. 99 on Reader Service Card
JULY, 1954 •

COMMERCIAL REFRIGERATION

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted, \$6.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢.

POSITIONS AVAILABLE

FACTORY REPRESENTATIVES. To handle most complete line in the industry: Commercial refrigerators, freezers, display cases, walk-ins. Promotionally-priced for volume sales. Some excellent territories available. If you have a proven record of good sales performance, write to President, FOGEL REFRIGERATOR CO., Phila. 37, Pennsylvania.

DESIGN ENGINEER—New York Headquarters of medium size manufacturer requires experienced man able to work on own initiative on design of special packaged refrigeration and air conditioning units and coil and condenser design. Send resume of education, experience, and recent earnings. Replies treated in strictest confidence. Box No. 7154, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

CLEVELAND FIRM ADDS ALCO, REDMOND LINES

Cleveland Hermetic & Supply Co. has been appointed a wholesaler in the Cleveland sales area for Alco Valve Co. products and for Redmond Micromotors, according to E. H. Wiedwald, head of the company.

KATHABAR APPOINTS NEW MIDWEST SALES AGENTS

Kathabar Air Conditioning Div. of Surface Combustion Corp. has appointed three new sales agents and located two company representatives in the Chicago area.

For the metropolitan Chicago area, George V. Zintel has been appointed exclusive sales agent, with offices at 840 N. Michigan Ave. Manufacturers Sales Co., 2023 Main St., Kansas City, will represent the Kathabar in western Missouri and northeastern Kansas. Hester-Bradley Co. will be sales agents in eastern Missouri and southern Illinois. Offices are located at 2835 Washington Blvd., St. Louis.

D. M. Valentine will be located in the Chicago area as district manager of the Kathabar Div., and F. B. Oates will concentrate primarily on providing additional service help. Their offices will be at 116 S. Prospect, Park Ridge, Ill.

DEVELOPS SYSTEM FOR RR-CAR REFRIGERATION

Dole Refrigerating Co. has announced development of a new type mechanically refrigerated railway car which was designed in conjunction with Saylor Beall Mfg. and Fairbanks Morse Co.

Previewed by officials of Chicago & Northwestern Railway System, the equipment, converted for mechanical refrigeration by North American Car Corp., consists essentially of a diesel-driven condensing unit and holdover plates.

By driving the condensing unit directly from the diesel engine, all electrical equipment and most electrically operated control devices are eliminated.

Engine and condensing unit are installed in the space formerly occupied by one ice bunker and the other ice bunker now provides about 10% additional cargo space. Holdover plates located in the ceiling occupy the same space formerly required for air circulation.

This system lends itself equally to new car construction and conversion of existing cars.

Handy Tube Bender

Smoothly Bends ANY
Pipe or Tubing



$\frac{3}{8}$ " to 1 $\frac{1}{8}$ " O.D.

● Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle. U and offset—every time. Eliminate need for els. No more guesses—no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.



See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

430 N. WILLOW ROAD — EVANSVILLE, IND

Circle No. 103 on Reader Service Card

JARENE CEMENT



For Bonding Rubber Refrigerator
DOOR GASKETS
To Metal and Wood Surfaces

● Jarene Cement provides a fast, easy method for installing refrigerator door gaskets. Supplied in liquid form and easily applied with a brush.

● Holds permanently. In many cases a "pull test" shows the rubber will tear before the cement releases.

● Sold in handy $\frac{1}{2}$ and 1 pint cans by wholesalers everywhere.

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Company
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City State

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8221 Clinton Road Cleveland 9, Ohio
Department C

Circle No. 105 on Reader Service Card

INDEX TO ADVERTISERS

A

Acme Electric Corp.	84
Acme Industries, Inc.	14
Aerovox Corp.	25
Airtemp Div., Chrysler Corp.	19
Alco Valve Co.	1
Allen-Bradley Co.	49
Allin Mfg. Co.	26, 94
American Automatic Ice Machine Co.	95
American Brass Co.	27
American Motors Corp., Kelvinator Div.	98
Anderson Chemical Co.	58
Ansul Chemical Co.	7, 97
Anthony Co.	96
A-P Controls Corp.	Cover 3

B

Baltimore Aircoil Co., Inc.	75
Barber-Colman Co.	26
Bell & Gossett Co.	29
Brunner Mfg. Co.	2
Bush Mfg. Co.	79

C

Century Electric Co.	85
Chase Brass & Copper Co.	43
Coldin Cabinet Co., Inc.	52
Commercial Credit Corp.	11
Copeland Refrigeration Corp.	Cover 2
Cornell-Dubilier Electric Corp.	30

D

Delavan Mfg. Co.	112
Detroit Controls Corp.	22
Dole Refrigerating Co.	100
Dow Chemical Co.	55
Drayer-Hanson, Inc.	77

E

Eastern Industries, Inc.	102
Electric Auto-Lite Co.	91
Electro Dynamic Div., General Dynamics Corp.	15
Eston Div., American Potash & Chemical Corp.	87

F

Frick Co.	78
Friez Instrument Div., Bendix Aviation Corp.	24

Frigidaire Div., General Motors Corp.	45, 57
--	--------

G

General Chemical Div., Allied Chemical & Dye Corp.	4, 5
General Tire & Rubber Co.	76

H

Halstead & Mitchell	8
Handy & Harman	31
Henry Valve Co.	16
Highside Chemicals Co.	23
S. A. Hirsh Mfg. Co.	105
Holsclaw Bros., Inc.	113

I

Ingersoll-Rand Co.	72
International Register Co.	21

J

Jacks-Evans Mfg. Co.	88
Jamison Cold Storage Door Co.	10
Janitrol Div., Surface Combustion Corp.	85
Jarrow Products	113

K

Karyall Body, Inc.	113
Kelvinator Div., American Motors Corp.	98
Kold-Hold Div., Tranter Mfg., Inc.	40
Kramer-Trenton Co.	50

L

LaCrosse Cooler Co.	54
Larkin Coils, Inc.	112
Lehigh Mfg. Co.	90
Linde Air Products Co., Unit of Union Carbide & Carbon Corp.	6, 56
Liquid Carbonic Corp.	107

M

Maid-O-Mist, Inc.	54
Jas. P. Marsh Corp.	46
McCabe-Powers Auto Body Co.	48
McIntire Co.	104
McQuay, Inc.	12
Mills Industries, Inc.	17
Morrison Steel Products, Inc.	89
J. W. Mortell Co.	28
Mueller Brass Co.	20

P

Packless Metal Hose, Inc.	52
Paragon Electric Co.	103
Peerless of America, Inc.	86
Peerless Electric Co.	9
Peerless Pump Div., Food Machinery & Chemical Corp.	81
Penn Controls, Inc.	32
Perfection Stove Co.	66
Pinnacle Equipment Corp.	108
Pyramid Instrument Co.	59

R

Ranco, Inc.	110
Reading Tube Corp.	13
Rector Well Equipment Co., Inc.	112
Redmond Distributors, Inc.	63
Revere Copper & Brass, Inc.	37
Rotary Seal Co.	91

S

Sporlan Valve Co.	92
Superior Valve & Fittings Co.	83

T

Taco Heaters, Inc.	62
Temprite Products Corp.	47, 99
Tenney Engineering, Inc.	106
Tork Clock Co., Inc.	94

U

Uniflow Mfg. Co.	44, 56, 63
Union Carbide & Carbon Corp., Linde Air Products Co.	6, 56
United Cork Co.'s	76
United States Air Conditioning Corp.	64

V

Virginia Smelting Co.	60, 109
-----------------------	---------

W

Wagner Tool & Supply Co.	61
John J. White, Inc.	78
White-Rodgers Electric Co.	18

Y

York Corp.	82
------------	----

Brand NEW



EVAPORATOR PRESSURE REGULATOR VALVE

**Positively prevents
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cooling equipment
and frosting
of air coils**

**1-ton Capacity,
Freon 12**



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Circle No. 2 on Reader Service Card

- 1 EASY INSTALLATION** — Installed between evaporator and system compressor.
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DEPENDABLE Controls

for Air • Liquids • Gases • Refrigerants

Franchise Circulation GETS A NEW PARTNER:

Action Audit

Now for the first time, the **WHOLE** story of a magazine for Advertisers
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The problem confronting every advertiser is to have his sales message read by the people upon whom his salesmen is calling. To attain that is the perfect integration of advertising to sales. Industrial advertising does a much more effective job backing up salesmen than it does to generate its own direct sales.

The Industrial Publishing Company has developed since 1932 what is probably the most effective means for reaching a sales market that has been devised in industrial advertising.

Wholesale distributors in the fields served by The Industrial Publishing Company's magazines, subscribe to the magazines for their best customers and prospective customers. They pay monthly for each subscription, and the people for whom they subscribe are the active buyers called on daily by their own salesmen. The lists are corrected monthly, assuring that the circulation remains sensitive to the personnel turnover in business and industry.

*How do you know we
reach the right man for you?*

Through ACTION AUDIT. This is the measuring stick which analyzes and particularizes the quantity and the QUALITY of the readers of your and your competitor's advertisements. No other method for such determination has heretofore been devised.

What is Action Audit?

The Industrial Publishing Company asked advertising buyers across the country what they needed to know in choosing publications.

All of the answers fell generally into the groups of "Who reads it?", "How does it reach him?", "What is the degree of the readers' interest?" and "How can the buyer certainly know these things?"

The editorial content of a book is tangible; quantitative circulation measurement has become almost standard practice; surveying has reached higher levels of value to the advertising practitioner. But there are still areas which need greater light.

"Action Audit" is the means of ascertaining and disclosing to the buyer, what happens when a magazine goes to the right man, in the right place, at the right time.

The beginning of a measurement

The Industrial Publishing Company's magazines solicit inquiries for the advertiser by means of a card which the reader may send for further information or action. They are sales leads but they are much more. **THEY ARE AN INDEX OF WHO IS READING; OF WHAT HE IS READING.**

*Why is Action Audit
useful to an advertiser?*

Publishers' presentations have historically been a "putting-of-the-best-foot-forward". A dozen points about a book have been taken out of context and placed in a favorable light before potential buyers. An advertising buyer about to make a decision has had a hodge-podge of claims and accusations upon which to form a judgement . . . with a suspicion that he also had missing parts.

Action Audit is a presentation by a publisher of the **TOTAL STORY OF HIS BOOK**, without deletion or expansion of fact. The advertising buyer sees the magazine exposed in all its nakedness and is able to make a fair estimate, with which he feels secure. He can defend his choice in his own mind and to other people. That is why Action Audit is essentially useful, because it is the **WHOLE** story.

ACTION AUDIT:

- Gives you **FACT** about reader traffic.
- Demonstrates the news value of business paper advertising.
- Takes circulation and market out of statistics and shows you **PEOPLE . . . people in action . . . people interested in what you sell.**
- Reflects interest in types of sales appeals.
- Indicates new pools of buyers every month.
- Shows publisher's sensitivity to reader interest and purchasing power.
- High-lights need for rapid, efficient inquiry handling for sales effectiveness.

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